codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

ALINORM 04/27/12
April 2004

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Twenty-seventh Session

Geneva, Switzerland, 28 June – 3 July 2004

REPORT OF THE 36th SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

Rotterdam, The Netherlands
22 - 26 March 2004

Note: This report includes Codex Circular Letter CL 2004/9-FAC

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CX 4/30.2 **CL 2004/9-FAC**
April 2004

TO: - Codex Contact Points

- Interested International Organizations

FROM: Secretary, Codex Alimentarius Commission
Joint FAO/WHO Food Standards Programme
Viale delle Terme di Caracalla, 00100 Rome, Italy

SUBJECT: DISTRIBUTION OF THE REPORT OF THE THIRTY-SIXTH SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS (ALINORM 04/27/12)

The report of the thirty-sixth Session of the Codex Committee on Food Additives and Contaminants will be considered by the 27th Session of the Codex Alimentarius Commission (Geneva, Switzerland, 28 June - 3 July 2004).

PART A: MATTERS FOR ADOPTION BY THE 27TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION

DRAFT AND PROPOSED DRAFT STANDARDS AND RELATED TEXTS AT STEPS 8 OR 5/8 OF THE UNIFORM PROCEDURE, RESPECTIVELY

1. **Draft Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants at Step 8** (para. 39 and Appendix II).

2. **Draft Food Category System of the Codex General Standard for Food Additives at Step 8** (para. 68 and Appendix V).

3. **Draft CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups at Step 8** (para. 125 and Appendix XIV).

4. **Draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts at Step 8** (para. 140 and Appendix XV).

5. **Draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods at Step 8** (para. 168 and Appendix XVI).

6. **Draft and proposed draft Revisions to Table 1 of the Codex General Standard for Food Additives at Steps 8 and 5/8 respectively** (para. 81 and Appendix VI).

7. **Specifications for the Identity and Purity of Food Additives (Category I) arising from the 61st Meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) at Step 5/8** (para. 99 and Appendix XI)

8. **Proposed draft Amendments to the International Numbering System for Food Additives at Step 5/8** (para. 103 and Appendix XII).

Governments wishing to propose amendments or to comment on the above texts should do so in writing in conformity with the Uniform Procedure for the Elaboration of Codex Standards and Related Texts (at Step 8 or 5/8) (Codex Alimentarius Commission Procedural Manual, Thirteenth Edition, pages 20 - 22) to the Secretary, Codex Alimentarius Commission, Viale delle Terme di Caracalla, 00100 Rome, Italy (telefax: +39.06.5705.4593; e-mail: codex@fao.org (***preferably***)) **no later than 31 May 2004.**

PROPOSED DRAFT STANDARDS AND RELATED TEXTS AT STEP 5 OF THE UNIFORM PROCEDURE

9. **Proposed draft Maximum Levels for Cadmium - rice, polished; wheat grain; potato; stem and root vegetables; leafy vegetables; and, other vegetables -** (para. 182 and Appendix XXIII).

10. **Proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts** (para. 143 and Appendix XX).

11. **Proposed draft Code of Practice for the Prevention and Reduction of Inorganic Tin Contamination in Canned Foods** (para. 174 and Appendix XXI).

12. **Proposed draft revised Guideline Levels for Radionuclides in Foods for Use in International Trade** (para. 204 and Appendix XXII).

Governments wishing to propose amendments or to comment regarding the implications which the above texts or any provisions thereof may have for their economic interests should do so in writing in conformity with the Uniform Procedure for the Elaboration of Codex Standards and Related Texts (at Step 5) (Codex Alimentarius Commission Procedural Manual, Thirteenth Edition, pages 20 - 22) to the Secretary, Codex Alimentarius Commission, Viale delle Terme di Caracalla, 00100 Rome, Italy (telefax: +39.06.5705.4593; e-mail: codex@fao.org (***preferably***)) **no later than 31 May 2004.**

PART B: REQUEST FOR COMMENTS AND INFORMATION

Governments and international organizations wishing to submit comments on the following subject matter are invited to do so **no later than 30 September 2004** as follows: Netherlands Codex Contact Point, Ministry of Agriculture, Nature Management and Fisheries, P.O. Box 20401, 2500 E.K., The Hague, The Netherlands (Telefax: +31.70.378.6141; E-mail: info@codexalimentarius.nl, with a copy to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, Viale delle Terme di Caracalla, 00100 Rome, Italy (Telefax: +39.06.5705.4593; E-mail: Codex@fao.org (***preferably***)).

13. **Draft (Step 6) and proposed draft (Step 3) Food Additive Provisions in Table 1 of the Codex General Standard for Food Additives** (para. 76 and Appendix IX).

14. **Proposed draft Maximum Level for Total Aflatoxins in Processed and Unprocessed Almonds, Hazelnuts, and Pistachios at Step 3** (para. 155 and Appendix XXV).

15. **Proposed draft Maximum Level for Cadmium in Molluscs (including Cephalopods) at Step 3** (para. 182 and Appendix XXIII).

16. **Maximum Levels for 3-MCPD (Chloropropanol) in Acid-hydrolyzed Vegetable Proteins (acid-HVPs) and Acid-HVP containing Products** (para. 193).

17. **Food Additives considered by the 61st JECFA Meeting in the context of the Codex General Standard for Food Additives - INS 961 Neotame and INS 1203 Polyvinyl alcohol (PVA) -** (para. 21 and Appendix XXVI).

18. **International Numbering System (INS) for Food Additives** (proposals for additions and/or amendments).

19. **Deoxynivalenol (DON) Contamination in Cereals** (para. 158).

20. **Mycotoxin Contamination in Sorghum** (para. 160).

21. **Provisional List of Main Internationally Traded Fish Species - including proposals for maximum levels for lead in different fish species -** (para. 164 and Appendix XIX).

22. **Priority List of Food Additives, Contaminants, and Naturally Occurring Toxicants proposed for evaluation by JECFA** (paras. 78, 211, and Appendix XXVII).

SUMMARY AND CONCLUSIONS

The thirty-sixth Session of the Codex Committee on Food Additives and Contaminants reached the following conclusions:

MATTERS FOR ADOPTION/CONSIDERATION BY THE 27TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION:

Draft and Proposed draft Standards and Related Texts at Steps 8 or 5/8 of the Uniform Procedure, Respectively

The Committee forwarded:

- the draft Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants to the Commission, through the Codex Committee on General Principles, for final adoption at Step 8 (para. 39 and Appendix II);
- the draft Food Category System of the Codex General Standard for Food Additives to the Commission for final adoption at Step 8 (para. 68 and Appendix V);
- the draft CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups to the Commission, through the Codex Committee on General Principles, for final adoption at Step 8 (para. 129 and Appendix XIV);
- the draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts to the Commission for final adoption at Step 8 (para. 140 and Appendix XV);
- the draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods to the Commission for final adoption at Step 8 (para. 168 and Appendix XVI);
- draft and proposed draft revisions to Table 1 of the Codex General Standard for Food Additives to the Commission for final adoption at Step 8 and 5/8 (with recommendation to omit Steps 6 and 7) (para. 81 and Appendix VI);
- Specifications for the Identity and Purity of Food Additives (Category I) arising from the 61st JECFA Meeting to the Commission for final adoption at Step 5/8 (with recommendation to omit Steps 6 and 7) (para. 99 and Appendix XI); and,
- proposed draft amendments to the International Numbering System (INS) of Food Additives to the Commission for final adoption at Step 5/8 (with recommendation to omit Steps 6 and 7) (para. 103 and Appendix XII).

Proposed Draft Standards and Related Texts at Step 5 of the Uniform Procedure

The Committee forwarded:

- proposed draft Maximum Levels for Cadmium (rice, polished; wheat grain; potato; stem and root vegetables; leafy vegetables; and, other vegetables) to the Commission for preliminary adoption at Step 5 (para. 182 and Appendix XXIII);
- proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts to the Commission for preliminary adoption at Step 5 (para. 143 and Appendix XX);
- proposed draft Code of Practice for the Prevention and Reduction of Inorganic Tin Contamination in Canned Foods to the Commission for preliminary adoption at Step 5 (para. 174 and Appendix XXI); and,
- proposed draft revised Guideline Levels for Radionuclides in Foods for Use in International Trade to the Commission for preliminary adoption at Step 5 (para. 204 and Appendix XXII).

Proposals for New Work

The Committee agreed to:

- revise the Codex General Standard for Contaminants and Toxins in Foods as new work to be undertaken by the Committee (para. 126);
- develop proposed draft Sampling Plans for Almonds, Brazil Nuts, Hazelnuts and Pistachios as new work to be undertaken by the Committee (para. 149); and,
- establish proposed draft Maximum Levels 3-MCPD (Chloropropanol) in Acid-hydrolyzed Vegetable Proteins (acid-HVPs) and Acid-HVP Containing Products as new work to be undertaken by the Committee (para. 193).

Other Matters for Consideration by the Codex Alimentarius Commission

The Committee agreed to:

- amend certain Sections of the Codex General Standard for Food Additives (para. 80 and Appendix IV);
- amend certain Sections of the Codex General Standard for Contaminants and Toxins in Foods (para. 125 and Appendix XIII);
- revoke some food additive provisions of the Codex General Standard for Food Additives (para. 83 and Appendix VII);
- discontinue work on a number of draft (Step 6) and proposed draft (Step 3) food additive provisions of the Codex General Standard for Food Additives (para. 84 and Appendix VIII);
- discontinue work on the elaboration of a proposed draft Code of Practice for the Safe Use of Active Chlorine pending the outcome of a Joint FAO/WHO Expert Consultation to assess the risk/benefits of the use of active chlorine in food processing upon availability of funds (paras. 91 - 93);
- discontinue work on the establishment of Maximum Levels for Deoxynivalenol (DON) (para. 158);
- request the Commission to endorse recommendations for food contaminant provisions in Codex commodity standards vis-à-vis the Codex General Standard for Contaminants and Toxins in Foods (para. 124); and,
- request the Commission to amend paragraph 4 of the Critical Review vis-à-vis the maintenance of the Codex General Standard for Food Additives, the Codex General Standard for Contaminants and Toxins in Foods, and other related texts developed by the Committee (para. 150).

MATTERS OF INTEREST TO THE CODEX ALIMENTARIUS COMMISSION AND/OR CODEX COMMITTEE AND TASK FORCES

Food Additives

The Committee agreed to:

- request information on some food additives considered by the 61st JECFA Meeting in the context of the Codex General Standard for Food Additives (GSFA) as a result of changes to existing acceptable daily intakes (ADIs) and/or the establishment of new ADIs namely: INS 961 Neotame and INS 1203 Polyvinyl alcohol (para. 21 and Appendix XXVI);
- endorse food additive and processing aid provisions arising from the Codex Committee on Fish and Fishery Products, the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices, and the Codex Alimentarius Commission (Codex Standard for Chocolate and Chocolate Products) (paras. 42, 47-49, and Appendix III);

- request the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices to clarify whether the technological function of polydimethylsiloxane was linked to a food additive use or a processing aid (para. 48);

- request the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices to clarify whether "coconut water" should be regarded as a fruit juice and if so to include this product under Food Category 14.1.2.1 Fruit Juice of the GSFA Food Category System (para. 67);

- reconvene the *ad hoc* Working Group on the Codex General Standard for Food Additives under the Chairmanship of the United States prior to its next Session (para. 52);

- re-install the newly named Electronic Working Group under the Chairmanship of the United States to work through electronic means on a number of draft food additive provisions, to develop a rational and consistent proposal to address the proposed draft, draft, and adopted food additive provisions for phenolic antioxidants of the GSFA, and to present a report for consideration by the Committee well before its next Session (para. 70 and Appendix X);

- establish a working group under the direction of China to elaborate on the working principles agreed to by the Committee for the development of the GSFA and their possible improvements including the relationship between food additive provisions of the GSFA and those of commodity standards for consideration at its next Session (paras. 43, 59, and 60);

- request information on the use of draft (Step 6) and proposed draft (Step 3) food additive provisions to Table 1 of the Codex General Standard for Food Additives for consideration at its next Session (para. 76 and Appendix IX);

- include new proposed uses for food additives submitted in response to CL 2002/44-FAC and CL 2003/34-FAC in Table 1 of the Codex General Standard for Food Additives and to circulate them at Step 3 under a separate Circular Letter for consideration at its next Session (para. 77);

- discontinue the consideration of processing aids in the context of the Codex General Standard for Food Additives and update on a regular basis the Inventory of Processing Aids (IPA) (paras. 87 - 88);

- establish a working group under the direction of United Kingdom to further elaborate on a Discussion Paper on Carriers, including the use of food additives as "nutrient carriers", for circulation, comments, and consideration at its next Session (para. 89);

- request relevant Codex Committees, including the Codex Committee on Food Hygiene, to: consider safety/benefits issues relevant to uses of active chlorine within their respective purviews, elaborate terms of reference for a possible Joint FAO/WHO Expert Consultation, and pose questions so that the Expert Consultation be comprehensive (para. 92);

- reconvene the a*d hoc* Working Group on Specifications prior to its next Session under the Chairmanship of the United States (para. 97);

- endorse recommendations in relation to new food additives to ensure that these were identified and designated by CCFAC and JECFA according to a common system of terminology (para. 106);

- establish a working group under the direction of the United Kingdom to prepare a document containing proposals on the harmonization of terms used by Codex and JECFA for circulation, comments, and consideration at its next Session (para. 107);

- establish a separate Working Group on the Harmonization of Terms used by Codex and JECFA to meet prior to its next Session to discuss the document produced by the above-mentioned working group and provide advice to the Committee in this respect (para. 107); and,

- entrust the establishment of functional classes that were not currently covered by the Class Names and International Numbering System for Food Additives, e.g. enzymes and propellant gases, to the Working Group on the International Numbering System for consideration at its next Session (para. 108); and,

- establish a working group under the direction of the United States to prepare a Discussion Paper on the Integration of Flavouring Agents in the Codex System for circulation, comments, and consideration at its next Session (para. 215).

Contaminants

The Committee agreed to:

- reconvene the *Ad Hoc* Working Group on Contaminants and Toxins under the Chairmanship of the European Community prior to its next Session (para. 114);

- endorse a number of recommendations in relation to the Codex General Standard for Contaminants and Toxins in Foods (GSCTF) e.g. to include Schedule I in the GSCTF, to exclude of quality-parameters from the GSCTF, to request Codex Committees the inclusion of maximum levels for quality-related parameters under the relevant Section(s) of commodity standards, to coordinate with the Codex Committee on Pesticide Residues the further development of the food categorization system to cover processed foods so that Schedule II can be included in the GSCTF, etc. (paras. 117 - 123); and,

- entrust the elaboration of a document containing an overview of the situation regarding Codex decisions on contaminants and toxins to the Delegations of the Netherlands and Japan for consideration at each Session of the Committee (paras. 118 - 119).

Mycotoxins in Foods and Feeds

The Committee agreed to:

- reconsider the Maximum Level for Patulin in Apple Juice and Apple Juice Ingredients in Other Beverages at a future Session in the light of the outcome of a re-evaluation to be performed by JECFA in 4 years time and the implementation of the Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients (paras. 130 - 131);

- limit the draft Maximum Level for Ochratoxin A to raw wheat, barley, and rye, retain the draft Maximum Level at Step 7, and place it on the Priority List for Evaluation by JECFA in 2006 (paras. 133, 136 - 137, and Appendices XVII and XXVII)

- request Iran to prepare a revised Discussion Paper on Aflatoxin Contamination in Brazil Nuts for circulation, comments, and consideration at its next Session (para. 148);

- discontinue consideration of methods of analysis for the determination of aflatoxins in tree nuts (para. 151);

- request information on deoxynivalenol (DON) contamination in cereals for consideration at its next Session (para. 158); and,

- request information on mycotoxin contamination in sorghum for consideration at its next Session (para. 160).

Industrial and Environmental Contaminants in Foods

The Committee agreed to:

- retain the draft Maximum Level for Lead in Fish at Step 7 and to review the level at its next Session in the light of the result of the evaluation of the 53rd JECFA Meeting (1999), a list of the main internationally traded fish species, and comments received in this regard (paras. 164-165 and Appendices XVIII and XIX);

- retain the proposed draft Maximum Level for Tin in Canned Beverages and Canned Foods other than Beverages at Step 4 and to reconsider the levels at a future Session in the light of the result of the 64th JECFA re-evaluation in 2005 (para. 171 and Appendix XXIV);

- discontinue the work on developing maximum levels for cadmium in fruits; meat of cattle, pigs, sheep, and poultry; horse meat; herbs, fungi (edible); celeriac; soybeans (dry); and, peanuts as no levels were necessary because these foods were no major contributors to cadmium intake (para. 176);

- request comments at Step 3 on the proposed draft Maximum Level for Cadmium in Molluscs (including Cephalopods) for consideration at its next Session (para. 182 and Appendix XXIII);

- establish a working group under the direction of Germany to revise the proposed draft Code of Practice for Source Directed Measures to reduce Dioxin and Dioxin-like PCB Contamination of Foods for circulation, comments at Step 3, and further consideration at its next Session (para. 185);

- discontinue the consideration of the Position Paper on Dioxins and Dioxin-like PCBs and encourage Codex Members to submit data on dioxins and dioxin-like PCBs in foods to WHO GEMS/Food Database on the understanding that WHO would report back to the Committee on the data submitted within 3 years time with a view to its possible future consideration (paras. 188 - 189);

- establish a working group under the direction of the United Kingdom to prepare an updated Discussion Paper on Chloropropanols with proposals for maximum levels in relevant commodities including acid-HVPs and foods containing acid-HVP for circulation, comments, and consideration at its next Session (para. 194);

- forward terms of reference for the JECFA evaluation on acrylamide in 2005 while establishing a working group under the direction of the United Kingdom and the United States to prepare an updated Discussion Paper on Acrylamide for circulation, comments, and consideration at its next Session (paras. 197-198);

- establish a working group under the direction of Denmark to prepare a Discussion Paper to consider issues related to polycyclic aromatic hydrocarbons (PAH) contamination in foods for circulation, comments, and consideration at its next Session (para. 217); and,

- establish a working group under the direction of the European Community, to prepare a Discussion Paper on the possible revision of the Guideline Level for Methylmercury in Fish including the examination of other possible management options for circulation, comments, and consideration at its next Session (para. 218).

Other General Issues

Priority List of Food Additives, Contaminants, and Naturally Occurring Toxicants proposed for Evaluation by JECFA

The Committee:

- noted that the proposed evaluation of the peroxide value (PV) for instant noodles was not a question of safety and should therefore not be proposed for evaluation by JECFA. Moreover, there were no data proving a positive correlation between peroxide values of foods and food toxicological parameters (para. 209); and,

- agreed to request comments for additions or amendments to the Priority List of Food Additives, Contaminants, and Naturally Occurring Toxicants for Evaluation by JECFA for consideration at its next Session (paras. 78, 211, and Appendix XXVII).

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REPORT OF THE 36TH SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

OPENING OF THE SESSION

1. Mrs Renee Bergkamp, Director General of the Netherlands Ministry of Agriculture, Nature and Food Quality opened the 36th Session of the Codex Committee on Food Additives and Contaminants (CCFAC), which was held in Rotterdam, the Netherlands, from 22-26 March 2004, at the kind invitation of the Government of the Netherlands. The Session was chaired by Ms Annie De Veer of the Netherlands Ministry of Agriculture, Nature and Food Quality. The Session was attended by 283 participants, representing 56 Member Countries, one Member Organization, and 38 International Organizations. The List of Participants is attached to this report as Appendix I.

2. The Delegation of the European Community presented CRD 23 (Annotated Agenda) on the division of competence between the European Community and its Member States according to paragraph 5, Rule II of Procedure of the Codex Alimentarius Commission.

ADOPTION OF THE AGENDA (Agenda Item 1)[1]

3. The Committee adopted the Provisional Agenda as proposed. It agreed to discuss the following under Agenda Item 18 "Other Business and Future Work":

- Flavouring agents (request from the United States);
- Polycyclic aromatic hydrocarbons (PAH) contamination (request from Denmark);
- Ochratoxin A in wine (request from the Office International de la Vigne et du Vin - OIV); and,
- Guideline level for methylmercury in fish (request from the 53rd Session of the Executive Committee).

4. The Committee agreed to hold Working Groups on the International Numbering System (INS) (Agenda Item 11) and on JECFA Priorities (Agenda Item 17) under the Chairmanship of Finland and the Netherlands, respectively.

APPOINTMENT OF THE RAPPORTEUR (Agenda Item 2)

5. The Committee agreed to appoint Dr. Bruce H. Lauer (Canada) as Rapporteur for the Session.

MATTERS REFERRED/OF INTEREST TO THE COMMITTEE ARISING FROM THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES (Agenda Item 3)[2]

6. The Committee noted that document CX/FAC 04/36/2, containing matters referred/of interest to the Committee arising from the Codex Alimentarius Commission (CAC) and Other Codex Committees and Task Forces, was divided in two parts. Part I related to matters of interest to the Committee arising from the 26th Session of the Codex Alimentarius Commission (July 2003) and other Codex Committees and Task Forces for which the Committee did not need to take any action, while Part II related to matters referred to the Committee by the Codex Alimentarius Commission and other Codex Committees and Task Forces for action. The Committee agreed that issues contained in Part II of the document would be considered under the relevant agenda items as indicated in the working paper.

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1 CX/FAC 04/36/1; and, comments submitted by OIV (CRD 7); and, Denmark (CRD 20).

2 CX/FAC 04/36/2.

7. In particular, the Committee noted the following matters concerning Part I: Amendments to the Procedural Manual, the Joint FAO/WHO Evaluation of the Codex Alimentarius and Other FAO and WHO Work on Food Standards, the FAO/WHO Trust Fund for Participation of Developing Countries in Codex Standard Setting Procedures; final adoption of draft standards and related texts at Steps 8, 5/8 and 5 of the Accelerated Procedure; preliminary adoption of proposed draft standards and related texts at Step 5; approval of proposals for new work; and, revision of the footnote to the maximum level for lead in milk. The Committee noted that all proposals put forward by the 34th and 35th Sessions in regard to final or preliminary adoption of draft and proposed draft standards and related texts, revisions, etc. were adopted/approved by the Commission, with the exception of draft maximum level for ochratoxin A in raw wheat, barley and derived products (returned to Step 6) and proposed draft maximum levels for cadmium in various commodities (returned to Step 3).

8. In addition, the Committee was informed of the decisions of the 53rd Session of the Executive Committee[3] (February 2004) concerning: (a) standards management functions, namely the Critical Review and the monitoring of progress of standards development; and, (b) the submission of proposals of new work in the format of a project document as proposed by the 19th Session of the Codex Committee on General Principles[4] (November 2003). In this regard, the Committee noted that the procedures related to the maintenance of the General Standard for Food Additives, the General Standard for Contaminants and Toxins in Foods, the Food Category System, and the International Numbering System should follow the procedures established by the Committee and endorsed by the Commission.

SIXTY-FIRST MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (JECFA) (Agenda Item 4)

SUMMARY REPORT OF THE 61ST MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (Agenda Item 4a)[5]

9. The Joint Secretariat to JECFA presented the results of the 61st Meeting of the Expert Committee (June 2003) as they were reported in the Summary Report of the Meeting. The Committee evaluated 23 food additives, 7 of them for specifications only and revised the levels for arsenic and heavy metals for an additional 39 additives. Full acceptable daily intakes (ADIs) were allocated to curcumin, diacetyltartaric and fatty acid esters of glycerol (DATEM), neotame, and polyvinyl alcohol.

10. The Expert Committee re-evaluated 6 different annatto extracts and decided to assess their toxicological properties separately and adopted for each product a separate specification. JECFA could not finalize the evaluation of these annatto extracts and was only able to assign temporary ADIs to 4 of the 6 extracts. D-Tagatose also received a temporary ADI. These additives would be discussed at subsequent meetings of JECFA.

11. The Expert Committee discussed quillaia extracts and decided to distinguish between a Type 1 product which was the extract that was previously evaluated by JECFA and a Type 2 extract with a higher content of the active saponin principles. For quillaia Type 1, the full ADI was re-established; for quillaia Type 2, an ADI could not be established due to missing information about the quantitative and qualitative composition of the product.

12. The Expert Committee evaluated 144 flavours in 7 different groups applying the decision tree approach developed by JECFA. All of them were considered to be of no safety concern at current levels of intake. For an additional 101 flavours, specifications were elaborated.

13. The Expert Committee also evaluated a water treatment agent (sodium dichloroisocyanurate NaDCC) and a nutritional source of iron (ferrous glycinate). However, neither of these substances were food additives and, therefore, were not up for discussion at the present Session of CCFAC.

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3 ALINORM 04/27/3, paras. 16 – 20.

4 ALINORM 04/27/33, Appendix III.

5 Report available online at the Joint Secretariat's web pages at FAO http://www.fao.org/es/ESN/jecfa/index_en.stm and WHO http://www.who.int/pcs/jecfa/jecfa.htm. Information paper by FAO/WHO (CRD 25).

14. For cadmium, the Expert Committee considered a number of new studies, addressing mainly the dose/response or dose/effect relationships of cadmium exposure and the effects on the kidney. The new data did not provide a sufficient basis for revising the provisional tolerable weekly intake (PTWI), therefore, the PTWI of 7 µg/kg of BW was maintained. Regarding the dietary intake of cadmium, new information from a number of countries was considered. National intake estimates and estimates based on the GEMS/Food regional diets resulted in an estimated cadmium intake of approximately 40-60% of the PTWI. Major dietary sources for cadmium were rice, wheat, starchy roots and tubers, molluscs, and vegetables other than leafy vegetables.

15. In the case of methylmercury (MeHg), the Expert Committee considered a variety of new data from human studies and confirmed that neurodevelopmental effects in children resulting from exposure to MeHg *in utero* was the most sensitive adverse health outcome. The Committee identified a maternal hair mercury level that resulted in no appreciable negative effect in the offspring. From this hair-mercury level, a tolerable intake levels was derived by conversion of the hair to a blood mercury level and relating the blood mercury levels to dietary intake levels. With the application of factors to account for uncertainty in these conversion steps, a PTWI of 1.6 µg/kg bw was derived. The Committee concluded that the previous intake assessment was still valid. For most populations, fish was the only significant source of methyl mercury.

16. The Joint Secretariat drew the attention of the Committee to the *Report of the FAO/WHO Workshop on the Provision of Scientific Advice to Codex and Member States* as presented in CRD 25 which contained the Executive Summary and the Recommendations prepared by a recently held Expert Workshop that discussed upon a request of FAO and WHO, possible improvements of the work of the several scientific expert bodies that provide advice on matters of food safety to Codex Alimentarius. Since one of these bodies was JECFA, Members of the Committee were asked to consider the outcome of the workshop. The full report, which was available at the websites of FAO and WHO, would be discussed at the next Session of the CAC (early July 2004).

17. Finally, the Joint Secretariat informed the Committee that the next two Meetings of JECFA would be dedicated to questions raised by CCFAC. The 63rd Meeting in June 2004 would deal with glycyrrhizic acid and food additives, whereas the 64th Meeting in February 2005 would discuss contaminants only. The calls for data for both Meetings were available on the Expert Committee's web pages. Member countries were asked to submit data on the substances that were on the agenda of these Meetings. As a matter of urgency, data for stevioside were requested for the Meeting in June 2004.

ACTION REQUIRED AS A RESULT OF CHANGES IN THE ADI STATUS AND OTHER TOXICOLOGICAL RECOMMENDATIONS (Agenda Item 4b)[6]

18. The Committee noted actions required by CCFAC as a result of changes to existing ADIs and/or the establishment of new ADIs for food additives, or other toxicological recommendations for contaminants, as recommended by the 61st JECFA Meeting.

19. The Committee agreed that no action was required with respect to the 6 annatto extracts, D-Tagatose and quillaia extract Type 2 due to their pending evaluation by JECFA (see para. 10).

20. The Committee noted that the Working Group on the International Numbering System had clarified the situation of D-Tagatose in relation to its INS number and had assigned INS numbers to it and to Polyvinyl alcohol (PVA) (see para. 101).

21. The Committee endorsed the recommendations of the *ad hoc* Working Group on the GFSA in this respect (see Appendix XXVI).

DRAFT RISK ANALYSIS PRINCIPLES APPLIED BY THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS (Agenda Item 5)[7]

22. The Committee noted that the 26th Session of the Codex Alimentarius Commission adopted at Step 5 and advanced to Step 6 the proposed draft Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants as proposed by the 35th Session of the Committee[8].

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6 CX/FAC 04/36/3; and, comments submitted by Brazil (CRD 27).

7 ALINORM 03/12A Appendix IV; CX/FAC 04/36/2-Part II; CL 2003/33-FAC; and, comments submitted by Brazil, Japan, Mexico, and Spain (CX/FAC 04/36/4); and, India (CRD 24).

23. The Committee also noted that the 26th Codex Alimentarius Commission adopted Working Principles for Risk Analysis for Application in the Framework of the Codex Alimentarius, while requesting the relevant Codex Committees to develop or complete specific guidelines on risk analysis in their respective areas, for inclusion in the Procedural Manual. The Committee further noted that the these texts would be submitted to the Codex Committee on General Principles in order to ensure coordination of work and consistency with overarching Working Principles[9].

24. The Committee discussed the draft Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants as follows:

Paragraph (d)

25. The Committee agreed to replace the term "Member States" by "Members" in this paragraph and throughout the document.

Paragraph (g)

26. The Committee recognized the need to define the term "safety assessment" which had no clear definition in Codex. In noting that the Joint FAO/WHO Project to Update the Principles and Methods for Risk Assessment of Chemicals in Foods would provide a definition of the term "safety assessment", it agreed on the need to keep consistency in the definition of this term. However, the Committee acknowledged that it should establish its risk analysis principles as soon as possible in view of their importance for the Committee's work and the recommendation of the Commission. Therefore, as an interim measure, the Committee decided to insert a footnote containing the definition for "safety assessment" that appeared in the original Discussion Paper[10], with the clear understanding that it would be replaced when the new definition from JECFA became available.

27. The Committee clarified that safety assessment was a component of risk assessment by replacing the word "or" by "including" as follows: "*...risk assessment ~~or~~ **including** safety assessment of food additives...*".

Paragraph (k)

28. The Committee noted the request to add a footnote to "other legitimate factors" to make reference to the "Statement of Principles Concerning the Role of Science in the Codex Decision Making-Process and the Extent to which Other Factors are Taken Into Account" as laid down in the Codex Alimentarius Commission Procedural Manual. However, the Committee felt that this was unnecessary, since these principles were to be incorporated in the Procedural Manual. In this connection, the Committee agreed that it was more appropriate to refer to "risk assessment and other legitimate factors", as risk assessment inherently included the concept of "quantitative" and "safety assessment" and, therefore, the reference to "quantitative" and "sufficient safety assessment" were deleted from this paragraph.

Paragraph (m)

29. The Committee agreed to replace the term "safety evaluation" by "safety assessment" as it was the appropriate term used in the context of JECFA and applied this amendment throughout the text.

Paragraph (n)

30. The Committee agreed to modify the latter part of the second statement to include appropriate sampling plans and analytical methods as adopted by Codex. The revised text also reflected that when establishing maximum levels for contaminants and toxins in foods, analytical capabilities of developing countries should be taken into consideration.

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8 ALINORM 03/12A, para. 28 and ALINORM 03/41, Appendix VI.

9 ALINORM 03/41, para.147.

10 CX/FAC 02/4, footnote 21.

Paragraph (o)

31. The Committee agreed that with regard to contaminants, the correct term was "maximum levels" as opposed to "maximum limits" and agreed to be consistent in using this term throughout the text. Also the Committee agreed to replace the acronym "ML" by the term "maximum level" wherever the former occurred.

32. The Committee noted the concern expressed by the Delegation of India that JECFA, as the body with scientific expertise, should take responsibility to recommend maximum levels to the Committee and considered the proposals to amend paragraphs (o) and (p) to this effect. The Committee noted that it was an established practice for CCFAC to decide maximum levels based on the outcome of JECFA's risk assessment and that the Working Principles for Risk Analysis for Application in the Framework of the Codex Alimentarius clearly distinguished that the responsibility for providing advice on risk management laid with the Codex Alimentarius Commission and its subsidiary bodies (risk managers) while the responsibility for risk assessment laid primarily with the joint FAO/WHO expert bodies and consultations (risk assessors).

33. In this connection, it was pointed out that since the procedure laid down in the document reflected the standing practice of CCFAC in setting maximum levels, it would not be appropriate at this stage to introduce amendments leading to major changes in the approach followed by CCFAC in this respect. As a result, the Committee agreed to leave the relevant paragraphs unchanged.

Paragraph (q)

34. The Committee agreed to change the term "any non-science-based considerations" by "other legitimate factors relevant to the health protection of consumers and for the promotion of fair practices in food trade" for consistency with paragraph (k).

Paragraph (cc)

35. The Committee agreed to delete the first part of the first sentence of this paragraph since its content did not comprise a criterion for JECFA to perform risk assessment.

Paragraph (ii)

36. The Committee recognized that "general risk analysis in Codex and CCFAC" referred to the adopted Working Principles for Risk Analysis for Application in the Framework of the Codex Alimentarius and to the actual document under discussion (Risk Analysis Principles applied by CCFAC) and, therefore, it agreed to make explicit reference to these documents in the paragraph.

Paragraphs (gg) and (kk)

37. The Committee noted that paragraph (gg) related to risk assessment performed by JECFA at the request of CCFAC while paragraph (kk) related to risk assessment performed by JECFA as part of its own working priorities.

Figure 1

38. After some discussion about the original intend of figure 1, which was to facilitate a common understanding of the roles of the CAC, CCFAC and JECFA on the risk analysis process, the Committee agreed that the figure had served its purpose and decided to delete it.

Status of the draft Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants

39. The Committee forwarded the draft Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants to the Codex Alimentarius Commission, through the Codex Committee on General Principles, for final adoption at Step 8 (see Appendix II) and inclusion in the Procedural Manual.

ENDORSEMENT AND/OR REVISION OF MAXIMUM LEVELS FOR FOOD ADDITIVES AND PROCESSING AIDS IN CODEX STANDARDS (Agenda Item 6)[11]

40. In accordance with the section concerning the relations between Commodity Committees and General Committees of the Codex Alimentarius Commission Procedural Manual, the Committee considered the endorsement of food additive and processing aid provisions arising from the Codex Committee on Fish and Fishery Products (CCFFP), the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices (TFFVJ), and the Codex Alimentarius Commission.

Draft Codex Standard for Salted Atlantic Herring and Salted Sprat

41. The Committee noted that at its 35th Session (March 2003) it endorsed food additive provisions, including propyl gallate (INS 310), in the draft Codex Standard for Salted Atlantic Herring and Salted Sprat. The Committee also noted that the 26th Session of the Codex Committee on Fish and Fishery Products (October 2003) agreed to delete this additive from the endorsed list of permitted additives as its use was not technologically justified in salted Atlantic herring and salted sprat.

42. The Committee decided not to endorse the deletion of propyl gallate from the draft Standard for Salted Atlantic Herring and Salted Sprat and decided to request further clarification from the Codex Committee on Fish and Fishery Products on this request, in particular, as to its technological justification. The Committee noted that the use of sorbates (INS 200 – 203), but not propyl gallate, were listed as antioxidants in this commodity Standard (see Appendix III).

43. The Committee noted that this request was part of a broader request that the CCFFP had forwarded to it. In that request, the CCFFP recognized that this product belonged to a food category identified in the General Standard for Food Additives (GSFA) as "09.2.5 smoked, dried, fermented, and/or salted fish, including molluscs, crustaceans and echinoderms" that allowed the use of food additives e.g. propyl gallate and fast green colour (INS 143) which were not permitted under the Codex Standard for Salted Atlantic Herring and Salted Sprat. Therefore, the CCFFP agreed to seek the advice of CCFAC to address the situation where a food additive was allowed in a food category of the GSFA but was not allowed in a particular product within that food category. The Committee agreed that this request should be taken up in the Working Group that would analyse the relationship between food additive provisions of the GSFA and those of the commodity standards in order to assure consistency throughout the Codex system (see para. 59).

Draft Codex General Standard for Fruit Juices and Nectars

Food Additives

44. The Committee endorsed food additive provisions in the draft Codex General Standard for Fruit Juices and Nectars with the following amendments:

Footnote 2

45. The Committee agreed to refer to "consumer" as opposed to "customer" to ensure that the maximum levels apply to the product as consumed.

Footnote 4

46. The Committee had an exchange of views on the need to keep Footnote 4 as only additives which were technologically justified were included in the GSFA. The Committee noted that the use of sulphites applied to specific cases such as fruit juices/nectars in bulk dispensers or to prevent oxidation in certain tropical fruit juices/nectars when no other more suitable technological means were available. The Committee further noted that the use of sulphites was subject to national legislation of the importing country. In view of this, the Committee amended Footnote 4 to limit the use of sulphites to fruit juices/nectars in bulk dispensers and to certain tropical fruit juices/nectars.

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11 CX/FAC 04/36/5 and CX/FAC 04/36/2-Part II.

47. The Committee agreed that, as a result of the above discussion, the current food additive provisions in the GSFA in Food Categories 14.1.2.1, 14.1.2.3, 14.1.3.1 and 14.1.3.3 would be removed and the provisions endorsed by CCFAC would be entered into the revised GSFA (see paras. 83-84 and Appendix III). Consequently, the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices should remove the list of food additives from the draft Codex General Standard for Fruit Juices and Nectars and replace it with the following text: "Food additives listed in Tables 1 and 2 of the Codex General Standard for Food Additives in Food Categories 14.1.2.1 (Fruit juice), 14.1.2.3 (Concentrates for fruit juice), 13.1.3.1 (Fruit nectar) and 14.1.3.3 (Concentrates for fruit nectar) may be used in foods subject to this Standard".

Processing Aids

48. The Committee endorsed processing aid provisions in the draft Codex General Standard for Fruit Juices and Nectars with the exception of polydimethylsiloxane. The Committee agreed to request further clarification about whether the technological function of this compound was linked to a food additive use or a processing aid. In addition, the Committee agreed that the column on Maximum Levels referred to levels of use and not to the residual level of the compound in the final product. Consequently, a maximum level of "GMP" was inserted for those compounds for which no levels were indicated (see Appendix III).

Codex Standard for Chocolate and Chocolate Products

49. The Committee agreed with the request of the 26th Session of the Codex Alimentarius Commission to amend the level of carnauba wax (INS 903) for Food Category "05.1.4 Cocoa and Chocolate Products" to 500 mg/kg instead of the GMP level in the GSFA[12] (see para. 82 and Appendix III).

CONSIDERATION OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7)

REPORT OF THE *AD HOC* WORKING GROUP ON THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7a)[13]

50. The 35th Session of the CCFAC decided to reconvene the *ad hoc* Working Group on the Codex General Standard for Food Additives prior to its 36th Session under the Chairmanship of the United States[14]. Dr Dennis Keefe (United States) chaired this meeting of the *ad hoc* Working Group and Dr Yukiko Yamada (Japan) acted as vice-chair. Ms Iona Pratt (Ireland) and Mr Najib Layachi (Morocco) served as rapporteurs.

51. The Chairperson of the *ad hoc* Working Group briefly summarized its discussions and proposed several general recommendations for endorsement by the Committee.

Status of the *ad hoc* Working Group on the Codex General Standard for Food Additives

52. The Committee decided to reconvene the *ad hoc* Working Group on the Codex General Standard for Food Additives prior to its next Session, under the Chairmanship of the United States.

PROPOSED DRAFT REVISED PREAMBLE OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7b)[15]

53. The Committee noted that the 26th Session of the Codex Alimentarius Commission approved the revision of the Preamble as new work for the Committee[16].

54. The Committee considered some of the recommendations contained in working document CX/FAC 04/36/6, regarding:

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12 ALINORM 03/41, para. 42.
13 CRD 1.
14 ALINORM 03/12A, para. 40.
15 CX/FAC 04/36/6; Report of the *ad hoc* Working Group on the GSFA (CRD1); and, comments submitted by Australia, European Community, Norway, United States, ELC, IFT, IFU, and ISDC (CX/FAC 04/36/6-Add-1); Thailand (CRD 17); and, Canada (CRD 28).
16 ALINORM 03/12A, para. 47 and ALINORM 03/41-App. VIII.

Current Format of the GFSA

55. The Committee agreed to request the Codex Secretariat to add clarifying language to the text of each page of the adopted GSFA that identified the section of the Standard and to delete Lists A and B (see para. 80).

56. It further agreed to amend Section 1.1 of the Preamble to include a reference to the JECFA website to provide ready access to the most up-to-date information on ADIs and to request JECFA to make an index of food additives available on its website with current information on ADI status, the year of the most recent JECFA review, and the INS number assigned to each additive as appropriate (see para. 80).

Definitions and Terminology Used in the GSFA; General Principles for the Use of Food Additives

57. The Committee considered the recommendation of the *ad hoc* Working Group[13] regarding the establishment of a Working Group to prepare a discussion paper, outlining the working principles that the CCFAC had previously developed during its elaboration of the GFSA, for discussion by the next Session of CCFAC.

58. The Committee recognized that in order to solve the conflicting views and make further progress in the development of the GSFA, it was important to be aware of the previous decisions and to establish a common understanding on the principles governing the GSFA and how they were commonly applied by the Committee. The second step, would be to improve these principles and to ensure consistency of all texts governing the development of the GSFA.

59. The Committee therefore agreed to establish a Working Group with the following terms of reference:

The Working Group shall:

(a) review the currently-used working principles applied by the Committee when developing the GSFA;

(b) adapt these working principles with the objective to improve the work, taking into consideration that the development of the GSFA needs to respect the following criteria:

(i) the GSFA needs to be consistent with other standards adopted by the Codex Alimentarius Commission;

(ii) the entries to the GSFA should be developed in a transparent manner;

(iii) the GSFA needs to be developed in a fair and consistent way; and,

(iv) the GSFA has been under development for more than 10 years, changes to the working principles should result in an acceleration rather than leading to further delay.

(c) describe the proposed amended working principles in a separate document that will accompany the GSFA. In a second step, the Working Group is asked to consider where these working principles would require the amendment of other documents adopted by the Commission;

(d) analyse, as part of this work, the relationship between provisions of the GSFA and those of Commodity Standards and shall propose procedures that will assure consistency among different sections of the Codex Alimentarius that address the use of food additives in standardized foods; and,

(e) present to the next Session of the Committee a progress report and possibly, depending on the progress made, questions in order to receive further comments.

60. The Committee agreed that the Working Group will be led by China with the assistance of Australia, Brazil, Canada, EC, France, India, Japan, Korea, Morocco, New Zealand, Sweden, Switzerland, Thailand, United States, ELC, ICGMA, IDF, and IFU.

DRAFT FOOD CATEGORY SYSTEM OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7c)[17]

61. The 26th Session of the Codex Alimentarius Commission adopted the proposed draft Food Category System of the Codex General Standard for Food Additives at Step 5 and advanced it to Step 6 as proposed by the 35th Session of the Committee[18]. In addition, the 35th Session of the CCFAC noted that Delegations of the Asian region would develop proposals on the finalization of certain Food Categories for soybean products for consideration at the next Session of the Committee[19].

62. In addition to the changes recommended by the *ad hoc* Working Group[13] to the Food Category System, the Committee made amendments to the following food categories and descriptors:

(a) 01.7 Dairy-based desserts (e.g., pudding, fruit or flavoured yoghurt);

(b) 5.2 Confectionery including hard and soft candy, nougats, etc. other than food categories 05.1, 05.3, and 05.4;

(c) 7.1.1 Breads and rolls;

(d) 12.2 Herbs, spices seasonings, and condiments (e.g. seasoning for instant noodles);

(e) 12.9.1 Soybean milk and 12.9.2 Soybean milk film; and,

(f) 14.1.2 Fruit and vegetable juices, 14.1.2.1 Fruit juice, and 14.1.2.3 Concentrates for fruit juice.

63. The Committee agreed on the above changes with the understanding that any consequential changes to adopted provisions in the GSFA would be accounted for as editorial matters.

64. The Committee agreed with the recommendation of the *ad hoc* Working Group[13] that use of the terms "filled milk", "filled condensed milk", and "filled milk powders" in the descriptors of food categories 01.3, 01.3.2, and 01.5.2 were included with the understanding that they would be aligned with the terms of relevant Codex Standards under development in the Codex Committee on Milk and Milk Products.

65. In recognizing the integral nature of the Food Category System (FCS) and the implications that further revisions would have on the GSFA, the Committee endorsed the recommendation of the *ad hoc* Working Group[13] to develop a more rigorous procedure for future revisions of the FCS.

66. The Committee agreed that all requests for revision of the FCS should be accompanied by a project document, prepared by the Committee or Member, detailing as appropriate:

(a) The purposes and the scope of the revision;

(b) Its relevance and timeliness;

(c) The main aspects to be covered; and,

(d) An assessment against the *Criteria for the Establishment of Work Priorities.*

67. The Committee endorsed the recommendation of the *ad hoc* Working Group[13] to request the *ad hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices to clarify whether coconut water should be included in the draft Codex General Standard for Fruit Juices and Nectars, with the understanding that if coconut water was included, coconut water would be included in Food Category 14.1.2.1.

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17 ALINORM 03/12A, Appendix II; CX/FAC 04/36/2-Part II; CL 2003/33-FAC; Report of the *ad hoc* Working Group on the GSFA (CRD1); and, comments submitted by Brazil, China, Greece, Spain, United States, and IFU (CX/FAC 04/36/7); IBFAN (CRD 16); Thailand (CRD 17); India (CRD 24); and, Brazil (CRD 27).

18 ALINORM 03/12A, para. 51 and ALINORM 03/41, Appendix VI.

19 ALINORM 03/12A, para. 50.

Status of the draft Food Category System of the Codex General Standard for Food Additives

68. The Committee forwarded the draft Food Category System of the Codex General Standard for Food Additives to the Codex Alimentarius Commission for final adoption at Step 8 (see Appendix V).

DRAFT AND PROPOSED DRAFT REVISIONS TO TABLE 1 OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7d)[20]

69. The 35th Session of the CCFAC noted that in the absence of the data required to implement revisions to Table 1 of the GSFA, additional comments on CL 2002/44-FAC should be requested for consideration at its next Session. The Committee decided to re-install the Quality Control Working Group, under the direction of the United States, to work through electronic means well before the next Session of the Committee[21].

Electronic Working Group

70. The Committee endorsed the recommendation of the *ad hoc* Working Group[13] to re-establish the newly named Electronic Working Group and requested it to provide a report with recommendations to the 37th Session of the CCFAC on the draft maximum levels for the food additives listed in Appendix X to this report. The Committee agreed that the report of the Electronic Working Group should also develop a rational and consistent proposal to address the proposed draft, draft, and adopted provisions for phenolic antioxidants (BHA, BHT, TBHQ, and propyl gallate) in the GSFA.

71. The Committee agreed that the Electronic Working Group would be led by the United States with the assistance of Australia, Brazil, Canada, EC, Japan, Ireland, South Africa, IFAC, and ICGMA.

Table 1 of the GFSA

Recommendations for Adoption of draft (at Step 8) and proposed draft (at Step 5/8) Food Additive Provisions

72. The Committee endorsed the recommendation of the *ad hoc* Working Group[13] to advance to Steps 8 and 5/8 (with recommendation to omit Steps 6 and 7) the draft and proposed draft food additives provisions of Table 1 of the GSFA, contained in Appendix VI to this report, for final adoption by the Commission (see para. 81). The Committee noted the reservation of the Delegations of the EC and Norway regarding the use level of benzoates in Food Category 14.1.4 "Water-based flavoured drinks, including "sport", "energy", or "electrolyte" drinks and particulated drinks".

73. The Committee also agreed to advance to Step 8 for final adoption by the Commission an amendment to the provision for the use of dimethyl dicarbonate (INS 242) in Food Category 14.1.5 "Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa" which would delete the reference to Note 2 (on dry ingredient, dry weight, dry mix or concentrate basis) (see para. 81).

Recommendations for Revocation of Adopted Food Additive Provisions and for Discontinuation of Draft and Proposed Draft Food Additive Provisions

74. The Committee noted that for some of the adopted and non-adopted food additive provisions to Table 1 of the GSFA, there were additives for which JECFA had withdrawn ADIs. It also noted that some of the adopted and non-adopted food additive provisions reflected the result of carry-over and needed to be deleted. It further noted the need to take into account the work of some Commodity Committees.

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20 CX/FAC 04/36/8; ALINORM 03/12, Appendix III; CL 2002/44-FAC; CL 2003/13-FAC; CL 2003/34-FAC; CX/FAC 04/36/2-Part II; Report of the *ad hoc* Working Group on the GSFA (CRD1); and, comments submitted by Australia, Brazil, El Salvador, European Community, Italy, Spain, IFAC, IFU, IPPA, ISDC, ISDI and, OIV (CX/FAC 04/36/9); Malaysia (CRD 15); Thailand (CRD 17); ISC (CRD 19); Norway (CRD 26); Brazil (CRD 27); and, Australia (CRD 30).

21 ALINORM 03/12A, paras 39 and 53.

75. As a result, the Committee agreed to:

(a) request the Commission to revoke adopted food additive provisions to Table 1 of the GSFA as contained in Appendix VII. The Committee noted that a decision on polydimethylsiloxane (INS 900a) would be taken in the light of the clarification provided by *ad hoc* Codex Intergovernmental Task force on Fruit and Vegetable Juices about the technological function of this compound (see paras. 47-48 and 83); and,

(b) discontinue work on draft (Step 6) and proposed draft (Step 3) food additive provisions as listed in Appendix VIII to this report (see paras. 47 and 84).

Request for Information

Draft (Step 6) and proposed draft (Step 3) Food Additive Provisions in Table 1 of the GFSA

76. The Committee asked the Codex Secretariat to request information on the use of the draft and proposed draft food additive provisions to Table 1 of the GFSA listed in Appendix IX to this report.

New entries for Food Additive Provisions in Table 1 of the GFSA

77. The Committee agreed that new proposed uses for food additives submitted in response to CL 2002/44-FAC and CL 2003/34-FAC should be included in the GSFA and circulated for comments at Step 3 under a separate Circular Letter. The Committee accepted the offer of the Delegation of the United States to prepare a revised GSFA with proposed draft, draft, and adopted food additive provisions.

Priority List for JECFA Evaluation

78. The Committee asked the Codex Secretariat to request information and data on beeswax (INS 901) and candelilla wax (INS 902) that were necessary for JECFA to perform an exposure assessment in relation to the proposed uses in Food Category 14.1.4 "Water-based flavoured drinks, including "sport", "energy" or "electrolyte" drinks and particulated drinks", based on adopted provisions in the GSFA (see Appendix XXVII).

79. The Committee took these decisions with the understanding that at its 37th Session it would delete these draft and proposed draft provisions, if such information and data were not submitted. In this regard, the Committee noted that the Delegation of Japan was willing to submit information on national consumption data on beeswax and would clarify the use levels of candelilla wax on a final product basis.

Status of the Codex General Standard for Food Additives

Amendment to the GSFA

80. The Committee forwarded to the Codex Alimentarius Commission the amendments to the General Standard for Food Additives namely: deletion of Lists A and B and addition of a footnote to Section 1.1 of the Preamble (see paras. 55-56 and Appendix IV).

Revisions to Table 1 of the GSFA

81. The Committee forwarded draft and proposed draft food additive provisions to the Codex Alimentarius Commission for final adoption at Steps 8 and 5/8 (with recommendation to omit Steps 6 and 7) for inclusion in Table 1 of the General Standard for Food Additives (see paras. 72 - 73 and Appendix VI).

82. The Committee forwarded to the Codex Alimentarius Commission an amendment to the maximum level of GMP in the GSFA for carnauba wax (INS 903) for Food Category 05.1.4 "Cocoa and Chocolate Products" which would establish a maximum level of 500 mg/kg (see para. 49 and Appendix VI).

83. The Committee requested the Codex Alimentarius Commission to revoke a number of food additive provisions in Table 1 of the General Standard for Food Additives (see paras. 47, 75 and Appendix VII).

84. The Committee informed the Codex Alimentarius Commission of discontinuation of work on a number of draft and proposed draft food additive provisions listed in Table 1 of the General Standard for Food Additives (see paras. 47, 75 and Appendix VIII).

DISCUSSION PAPER ON THE CONSIDERATION OF PROCESSING AIDS AND CARRIERS (Agenda Item 8)[22]

85. The 35th Session of the CCFAC decided that a drafting group under the direction of Switzerland would elaborate a discussion paper on realistic approaches and recommendations on the consideration of processing aids and carriers for circulation, comments, and further discussion at its next Session[23].

86. The Delegation of Switzerland briefly introduced the document by highlighting the main recommendations on: (a) future consideration of processing aids; (b) inventory of processing aids; and, (c) inclusion of carriers in the GSFA.

Future Consideration of Processing Aids

87. The Committee recognised that the development of a positive list of processing aids was not a realistic approach to resolving the issue. It acknowledged that provisions for processing aids were already included in commodity standards. It agreed on the need to develop guidelines, for the use of Governments, to address various aspects such as principles for the use of processing aids and their control; advice on Good Manufacturing Practice; information on handling; etc. However, the Committee could not identify a delegation willing to prepare a document dealing with these issues.

Inventory of Processing Aids (IPA)

88. The Committee, in recognizing the value of the IPA as a useful reference for countries, in particular developing countries, agreed to maintain the IPA for the time being and accepted the offer of the Delegation of New Zealand to prepare an updated version of the IPA for consideration at its next Session. In this regard, it was noted that reference to some enzyme preparations that were recently evaluated by JECFA, should be considered when updating the IPA. It was also noted that the IPA version available on the Codex website needed to be updated.

Inclusion of Carriers in the GSFA

89. The Committee considered a definition for the term "carrier" in view of the development of a suitable approach for consideration of carriers in the GSFA. In recognizing the difficulty to reach a common understanding on the definition, the Committee agreed that a working group led by the United Kingdom, with the assistance of the EC, Ghana, Switzerland, and the United States would prepare a discussion paper that would address the definition and approaches for the inclusion of carriers in the GSFA, including the use of food additives as "nutrient carriers" as requested by the 25th Session of the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU)[24] for circulation, comments, and consideration at its next Session.

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22 CX/FAC 04/36/10; CX/FAC 04/36/2-Part II; and, comments submitted by Australia, Cuba, European Community, Ghana, Norway, Poland, Unites States, AMFEP, CEFIC, ELC, IFU, and IFT (CX/FAC 04/36/10-Add 1); India (CRD 24); and, Brazil (CRD 27).

23 ALINORM 03/12A, para. 60.

24 ALINORM 04/27/26, paras. 131-137

PROPOSED DRAFT CODE OF PRACTICE ON THE SAFE USE OF ACTIVE CHLORINE (Agenda Item 9)[25]

90. The 35th Session of the CCFAC decided to commence work on the development of a Code of Practice for the Safe Use of Active Chlorine and agreed that a working group led by Denmark would prepare a proposed draft Code of Practice for circulation, comments, and further consideration at this Session[26]. The 26th Session of the Codex Alimentarius Commission approved the elaboration of the Code of Practice as new work for the Committee with the understanding that recommendations on the safe use of active chlorine would require close collaboration with other Codex Committees, such as the Codex Committee on Food Hygiene[27].

91. In presenting the document, the Delegation of Denmark pointed out that an evaluation of the technological effects; the efficacy; and, the risk assessment of residues and reaction products of the active chlorine compounds was necessary in order to assess whether the benefits on the microbiological contamination outweigh the possible risks of intake of chlorine and its reaction products. In this regard, the Committee noted that a Joint FAO/WHO Expert Consultation would be a more appropriate forum to carry out this evaluation and assessment, as it could bring together all necessary expertise. It was also stressed that undertaking this consultation would depend upon the availability of financial resources of FAO and WHO.

92. The Committee agreed to request FAO and WHO to convene a Joint Expert Consultation to conduct a comprehensive assessment of use of active chlorine, taking into account both benefits and risks. In recognizing the multiple aspects of the use of active chlorine, the Committee agreed on the need to clearly define the scope of the Expert Consultation. Therefore, it agreed that a working group led by Denmark with the assistance of Australia, Canada, EC, Ireland, Korea, Philippines, United States, and ICGMA would prepare clear terms of reference for the expert consultation for the aspects relevant to the CCFAC for discussion at its next Session. It was also agreed to request relevant Committees, including the Codex Committee on Food Hygiene, to: (a) consider safety/benefit issues relevant to uses of active chlorine within their respective purviews; (b) elaborate terms of reference for the expert consultation within their mandates; and, (c) pose questions so that the Expert Consultation be comprehensive.

Status of the proposed draft Code of Practice on the Safe Use of Active Chlorine

93. The Committee decided to discontinue work on the development of a Code of Practice on the Safe Use of Active Chlorine and to inform the Codex Alimentarius Commission accordingly. It was understood that the Committee would consider resuming this work in the light of any recommendation emanating from the proposed Joint FAO/WHO Expert Consultation.

SPECIFICATIONS FOR THE IDENTITY AND PURITY OF FOOD ADDITIVES (Agenda Item 10)

REPORT OF THE *AD HOC* WORKING GROUP ON SPECIFICATIONS (Agenda Item 10a)[28]

94. The 35th Session of the CCFAC decided to reconvene the *ad hoc* Working Group on Specifications prior to its current Session under the Chairmanship of the United States. The *ad hoc* Working Group's meeting was chaired by Mr Paul Kuznesof (United States). Mrs H.C. Wallin (Finland) acted as Rapporteur and Mrs I. Meyland (Denmark) as Category Monitor. The recommendations of the *ad hoc* Working Group were considered under Agenda Item 11(b).

95. The *ad hoc* Working Group considered the monographs for Specifications for the Identity and Purity of Food Additives and Flavouring Agents established at the 61st Meeting of JECFA and published in Food and Nutrition Paper 52-Addendum 11 (FNP 52–Add.11) along with the comments received on this document. The *ad hoc* Working Group assigned the monographs to categories for use by the full Committee.

96. In addition, the *ad hoc* Working Group considered Principles Governing the Establishment and Revision of Specifications that were discussed by JECFA (published in Section A of FNP 52–Add.11) and provided feedback to the FAO Joint Secretary on some of these matters.

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25 CX/FAC 04/36/11; and, comments submitted by Canada, Cuba, European Community, United States, ICGMA, and ISDC (CX/FC 04/36/11-Add.1); and, India (CRD 24).

26 ALINORM 03/12A, paras. 67 – 68.

27 ALINORM 03/41, para. 131 and Appendix VIII.

28 CRD 2.

Status of the *ad hoc* Working Group on Specifications

97. The Committee decided to reconvene the *ad hoc* Working Group on Specifications prior to its next Session under the Chairmanship of the United States.

SPECIFICATIONS FOR THE IDENTITY AND PURITY OF FOOD ADDITIVES ARISING FROM THE 61ST JECFA MEETING (Agenda Item 10b)[29]

98. The Committee agreed with the following recommendations of the *ad hoc* Working Group[28]:

(a) to forward for final adoption the Category I Specifications for 13 food additives;

(b) to forward for final adoption the Category I Specifications for 225 flavouring agents;

(c) to forward for final adoption the updated levels for arsenic and lead, and the deletion of the Heavy Metals (as lead) levels for 33 Specifications; and,

(d) to refer back the Category III Specifications for food additives to JECFA for further revisions namely: laccase from *Myceliophora thermophila* expressed in *Aspergillus oryzae* and sucrose esters of fatty acids.

Status of the Specifications for the Identity and Purity of Food Additives arising from the 61st JECFA Meeting

99. The Committee forwarded 13 food additive Specifications, 225 flavouring agent Specifications in Category I and 33 revised Specifications to the Codex Alimentarius Commission for adoption at Step 5/8 (with recommendation to omit Steps 6 and 7) as Codex Advisory Specifications (see Appendix XI).

INTERNATIONAL NUMBERING SYSTEM (INS) FOR FOOD ADDITIVES (Agenda Item 11)

PROPOSALS FOR AMENDMENTS TO THE INTERNATIONAL NUMBERING SYSTEM (INS) (Agenda Item 11a)[30]

100. The Committee noted that the comments received in response to CL 2003/13-FAC had been discussed by the Working Group on the International Numbering System that was chaired by Mrs H. Wallin (Finland), who presented the recommendations of the Working Group.

REPORT OF THE WORKING GROUP ON THE INTERNATIONAL NUMBERING SYSTEM (Agenda Item 11b)[31]

101. The Committee agreed to the following recommendations of the Working Group[31]:

(a) To allow for alternative names for INS entries 466 "Sodium carboxymethyl cellulose/Cellulose gum"; 468 "Cross-linked sodium carboxymethyl cellulose/Cross-linked cellulose gum"; and, 469 "Carboxymethyl cellulose, enzymatically hydrolysed/Cellulose gum, enzymatically hydrolysed";

(b) To assign INS Number 1203 to Polyvinyl alcohol with the following technological functions: coating, binder, sealing agent, and surface-finishing agent;

(c) To assign INS Number 426 to Soybean hemicellulose with the following technological functions: emulsifier, thickener, stabilizer, and anti-caking agent;

(d) To change INS Number 962 for the sweetener D-Tagatose (which had been allocated at the 35th Session of CCFAC) to 963 in order to align the INS and the EU numbers for Acesulfame-aspartame salt; and,

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29 CX/FAC 04/36/12; and, comments submitted by Japan (CX/FAC 04/36/12-Add. 1); and, Brazil (CRD 27).

30 CL 2003/13-FAC; CX/FAC 04/36/2-Part II; and, comments submitted by IFAC (CX/FAC 04/36/13); and, Brazil (CRD 27).

31 CRD 4.

(e) To assign INS Number 962 to Acesulfame-aspartame salt with the technological function of a sweetener.

102. The Committee agreed to request the Codex Secretariat to update the INS list posted on the Codex webpage in a timely manner following each Session of the Codex Alimentarius Commission.

Status of the Amendments to the International Numbering System for Food Additives

103. The Committee forwarded the proposed draft amendments to the International Numbering System for Food Additives to the Codex Alimentarius Commission for final adoption at Step 5/8 (with recommendation to omit Steps 6 and 7) (see Appendix XII).

DISCUSSION PAPER ON THE HARMONIZATION OF TERMS USED BY CODEX AND JECFA (Agenda Item 11c)[32]

104. The 35th Session of the CCFAC requested the Codex Secretariat to prepare a discussion paper on the Harmonization of Terms used by Codex and the Joint FAO/WHO Expert Committee on Food Additives for sub-classes and technological functions for consideration at its next Session[33]. The work had been undertaken by a consultant to the Codex Secretariat (Dr Simon Brooke-Taylor, Australia).

105. The Committee was informed that the paper had also been considered by the Working Group on the International Numbering System. It noted that the use of the Table of Functional Classes, Definitions and Technological Functions for Food Additives in Section 2 of the Codex Guidelines on Class Names and the International Numbering System for Food Additives[34] and Class Names/Titles used in the Codex General Standard for the Labelling of Pre-packaged Foods[35] must be consistent and, therefore, any changes in the Table of Functional Classes made by CCFAC would also need to be taken up as new Class Names by the Codex Committee on Food Labelling (CCFL) in the form of an amendment to the Codex General Standard for the Labelling of Pre-packaged Foods.

106. The Committee agreed to the following recommendations in relation to new food additives to ensure that these were identified and designated by CCFAC and JECFA according to a common system of terminology:

(a) In its requests for evaluation of an additive, CCFAC should ask JECFA to identify the functional classes and/or sub-classes that are relevant to the evaluation and specification using terms taken from the appropriate Codex texts; and,

(b) in the case of a food additive, JECFA should be requested to describe the sub-category or technological function within the scope of the existing INS Table of Functional Classes. Where JECFA considers that the technological function of an additive is not properly described by Codex texts, it should be encouraged to advise CCFAC of its decision and recommend an amendment to the relevant Codex texts to add the new technological function.

107. The Committee noted that in the GSFA there were a number of adopted and non-adopted provisions for food additives which were associated with technological functions that did not occur in the INS Table of Functional Classes. The Committee agreed to harmonise the functional classes listed in the adopted and non-adopted provisions of the GSFA with the INS Table of Functional Classes and accepted the recommendations of the Working Group on the INS[31] to:

(a) establish a working group under the direction of the United Kingdom, with the assistance of Brazil, EC, and the United States, to prepare a working document containing a clear proposal for the harmonisation of terms used by Codex and JECFA for circulation, comments, and consideration at its next Session; and,

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32 CX/FAC 04/36/14; and, comments submitted by Canada, European Community, United States, and OFCA (CX/FAC 04/36/14-Add 1); and, Brazil (CRD 27).

33 ALINORM 03/12A, para. 101.

34 CAC/GL 36/2001.

35 Codex STAN 1-1985, Rev. 1-1991.

(b) establish a separate Working Group on the Harmonization of Terms used by Codex and JECFA to meet immediately prior to the next Session of CCFAC, to discuss the working document produced by the above-mentioned Working Group and provide advice to the Committee.

108. The Committee noted that the Working Group on the International Numbering System would also address the request of the 25th Session of the CCNFSDU[36] with regard the establishment of functional classes that were not currently covered, especially enzymes and propellant gases.

ENDORSEMENT AND/OR REVISION OF MAXIMUM LEVELS FOR CONTAMINANTS IN CODEX STANDARDS (Agenda Item 12)[37]

109. In accordance with the section concerning Relations between Commodity Committees and General Committees of the Codex Alimentarius Commission Procedural Manual, all provisions in respect to contaminants contained in Codex commodity standards should be referred to the Codex Committee on Additives and Contaminants for endorsement.

110. The Committee noted that no maximum levels for contaminants had been submitted for endorsement since its 35th Session and, therefore, no action was required.

CONSIDERATION OF THE CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOODS (Agenda Item 13)

REPORT OF THE *AD HOC* WORKING GROUP ON CONTAMINANTS AND TOXINS IN FOODS (Agenda Item 13a)[38]

111. The 35th Session of the CCFAC decided to reconvene the *ad hoc* Working Group on Contaminants and Toxins in Foods prior to its current Session under the Chairmanship of Denmark[39]. The *ad hoc* Working Group temporarily appointed Mr Frans Verstraete (EC) as Chairperson of the *ad hoc* Working Group. Dr Paul Brent (Australia), Mr Rob Theelen (the Netherlands), and Mrs Maria Cecilia Toledo (Brazil) acted as rapporteurs.

112. The Committee noted that Dr Torsten Berg (Denmark), previous Chairperson of the *ad hoc* Working Group, would no longer be able to attend sessions of the Committee due to a new assignment and wished him all the best in his new position.

113. The Chairperson of the *ad hoc* Working Group briefly summarized its discussions and recommendations based on the Plenary Agenda of the Committee.

Status of the *ad hoc* Working Group on Contaminants and Toxins in Foods

114. The Committee agreed to reconvene the *ad hoc* Working Group on Contaminants and Toxins in Foods prior to its 37th Session under the Chairmanship of the European Community.

SCHEDULE I OF THE GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOODS (Agenda Item 13b)[40]

115. The 35th Session of the CCFAC agreed that a revised version of Schedule I of the Codex General Standards for Contaminants and Toxins in Foods (GSCTF) should be presented for consideration at its next Session. The revision was performed by Dr David Kloet (the Netherlands) and Dr Yukiko Yamada (Japan).

116. The Committee based its discussion on the questions raised in paragraphs 1 to 5 of the working paper as follows:

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36 CX/FAC 04/27/26, paras 88-93.
37 ALINORM 04/36/15 (not issued).
38 CRD3.
39 ALINORM 03/12A, para. 105.
40 CX/FAC 04/36/16; and, comments submitted by Canada, Poland and IFU (CX/FAC 04/36/16-Add.1); European Community (CRD 6); and, Brazil (CRD 27).

Inclusion of Schedule I in the GSCTF

117. The Committee agreed with the Recommendation of the *ad hoc* Working Group[38] to include Schedule I in the format presented in the working paper. It was noted that some editorial amendments needed to be made before its inclusion in the GSCTF and the Committee agreed to entrust this work to the Codex and JECFA Secretariats, the latter to correct the references to toxicological intake.

Removal of Annex IV (Annotated List of Contaminants and Toxins) of the GSCTF

118. The Committee noted that Annex IV was an informative document encompassing contaminants and toxins for which maximum levels had been developed or were being developed in Codex. The document was considered useful in providing an overview of the situation regarding Codex decisions about contaminants and toxins, and to give guidance about further actions required by CCFAC.

119. The Committee agreed with the recommendation of the *ad hoc* Working Group[38] that such information should be part of a working document to be updated yearly and presented at each Session of the Committee for information and support for the discussions on the GSCTF. The Committee also agreed that the working document should not contain any reference to revoked maximum levels. In taking this decision, the Committee agreed to amend the GSCTF by removing Annex IV and all references to it in the General Standard. The Committee requested the Delegations of the Netherlands and Japan to revise the working document, using a suitable database, for presentation at the next Session of the Committee.

Exclusion of quality-related parameters from the GSCTF

120. The Committee noted that the Preamble of the GSCTF clearly stated that the Standard did not apply to contaminants having food quality significance but not public health significance in foods[41]. It therefore agreed with the recommendation of the *ad hoc* Working Group[38] not to include maximum levels for quality-related parameters such as copper, zinc, iron, etc. in the General Standard but to keep this information in above-mentioned working document as a record of the complete range of contaminants in the Codex system.

121. In this connection, the Committee agreed to request Codex commodity committees that when developing such maximum levels to include them in the commodity standards under the appropriate Section related to quality factors i.e. "Essential Composition and Quality Factors". The Committee also agreed to request Codex commodity committees to refer to the GSCTF when mentioning maximum levels for safety-related contaminants in the commodity standards.

Inclusion of Schedule II in the GSCTF

122. The Committee noted that Schedule II presented a list of maximum levels for contaminants and toxins arranged by food category. In this regard, the Committee noted that the current food categorization system used in the GSCTF was based on a system developed by the Codex Committee on Pesticide Residues (CCPR). The Committee further noted that CCPR developed this list mainly for primary food commodities although some processed foods such as fruit juices were already included. However, further work was required for processed, derived and multi-ingredient foods.

123. The Committee agreed with the recommendation of the *ad hoc* Working Group[38] that, in view of the lack of commodity codes for some existing commodities with contaminant maximum levels, it would not be advisable at this stage to include Schedule II in the GSCTF. Meanwhile, it was agreed that the Committee should enter into consultations with CCPR to determine the best approach to be followed for further development of the food categorization system, in order to allow inclusion of Schedule II in the GSCT at sometime in the future.

Revocation of Maximum Levels for Contaminants in Codex Commodity Standards

124. In order to avoid current and future inconsistencies between the GSCTF and commodity standards, the Committee agreed with the recommendation of the *ad hoc* Working Group[38] to request the Codex Alimentarius Commission to endorse the following recommendations:

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41 Codex General Standard for Contaminants and Toxins in Foods, Section 1.2.2 (1).

(a) The Codex Alimentarius Commission should explicitly revoke existing safety-related maximum levels in commodity standards which are inconsistent with already adopted maximum levels by the Commission; and,

(b) When CCFAC proposes maximum levels for final adoption at Step 8 it will simultaneously propose to explicit revocation of corresponding maximum levels in commodity standards which are inconsistent with the proposed maximum level.

Status of the Codex General Standard for Contaminants and Toxins in Foods

125. The Committee forwarded the amendment to the General Standard for Contaminants and Toxins in Foods (removal of Annex IV and its reference in the General Standard) for adoption by the Codex Alimentarius Commission (see para. 119 and Appendix XIII).

126. In addition, the Committee agreed to revise the General Standard for Contaminants and Toxins in Foods to include those relevant paragraphs in the CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups that should be considered as advice for governments and, therefore, agreed to request the Codex Alimentarius Commission to approve this revision as new work for the Committee. The Committee further agreed to entrust this work to a working group led by Japan with the assistance of France, India, and the Netherlands, for circulation, comments, and consideration at its next Session.

DRAFT CCFAC POLICY FOR EXPOSURE ASSESSMENT OF CONTAMINANTS AND TOXINS IN FOODS OR FOOD GROUPS (Agenda Item 13c)[42]

127. The 26th Session of the Codex Alimentarius Commission adopted the proposed draft CCFAC for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups at Step 5 and advanced it to Step 6 as proposed by the 35th Session of the Committee. In making this decision, the Commission noted that the text should be included either in the Procedural Manual for the advice of the Commission or in the General Standard for Contaminants and Toxins in Foods for the advice of Members.

128. The Committee agreed with the following revisions to the draft text:

(a) To delete the Annex containing the flowchart as it was rather complex and did not provide any information not already contained in the text. Consequently, paragraph 4 referring to the Annex was deleted;

(b) To delete paragraph 5 as it was not necessary; and,

(c) To add an additional paragraph at the end of Section 1 stating that JECFA should estimate the impact on dietary exposure of proposed alternative maximum levels, if requested by CCFAC. The Delegation of Belgium expressed its reservation on this decision.

Status of the draft CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups

129. The Committee forwarded the draft CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups to the Codex Alimentarius Commission, through the Codex Committee on General Principles, for final adoption at Step 8 and inclusion in the Procedural Manual (see Appendix XIV).

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42 ALINORM 03/12A, Appendix VIII; CX/FAC 04/36/2-Part II; CL 2003/33-FAC; and, comments submitted by Brazil (CX/FAC 04/36/17); European Community (CRD 6); India (CRD 24); and, Japan (CRD 29).

MYCOTOXIN IN FOOD AND FEED (Agenda Item 14)

MAXIMUM LEVEL FOR PATULIN IN APPLE JUICE AND APPLE JUICE INGREDIENTS IN OTHER BEVERAGES – New data submitted (Agenda Item 14a)[43]

130. The 26th Session of the Codex Alimentarius Commission adopted the draft maximum level of 50 μg/kg for patulin in apple juice and apple juice ingredients in other beverages at Step 8. The Commission noted that the CCFAC had proposed the adoption of this maximum level on the understanding that the level might be lower to 25 μg/kg based on the application of the Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients in Other Beverages (i.e. four years after its adoption). Meanwhile, the Commission supported the decision of the Committee to continue to collect data on the levels of patulin in apple juice and apple juice ingredients for other beverages to enable the Committee to reconsider the possible reduction of the maximum level once the Code of Practice had been implemented[44].

131. The Committee agreed that the best way to deal with this decision was to remove patulin from the Agenda of the Committee and to include it on the Priority List for Evaluation by JECFA in 4 years time (i.e. 2007). In order to ease the comparison of data, the Committee also agreed that Members should submit data in the form of GEMS/Food directly to WHO which would yearly report back to the Committee on the status of the submission of data. The Committee further agreed that, based on the available data, it would make specific requests to JECFA as to the type of risk assessment that should be performed.

DRAFT MAXIMUM LEVEL FOR OCHRATOXIN A IN RAW WHEAT, BARLEY, RYE, AND DERIVED PRODUCTS (Agenda Item 14b)[45]

132. The 34th Session of the CCFAC forwarded a maximum level of 5 μg/kg in cereals such as wheat, barley, rye, and derived products to the Codex Alimentarius Commission for final adoption at Step 8[46]. The Commission concluded that there was a lack of consensus on the adoption of the maximum level regarding both the appropriate maximum level and the inclusion, or exclusion, of the reference to "derived products" and it therefore returned the draft maximum level to Step 6 for further work by the Committee[47].

133. The Committee noted that given the wide range of derived products and that many of them were of little or no importance in international trade, the maximum level should be limited to raw wheat, barley, and rye.

134. The Delegation of the EC, informed the Committee that occurrence data and application of this maximum level in the European Union indicated that the level of 5 μg/kg in these products was technologically achievable. In addition, the Delegation of the EC stated that the 56th JECFA Meeting (February 2001) had recommended that all efforts should be made to lower overall contamination by ochratoxin A by appropriate agricultural, storage and processing practices. The Delegation noted that the recently adopted Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals and its Annex on ochratoxin A could assist Codex Members in achieving this maximum level. It was also noted that Ochratoxin A was a carcinogenic compound, the intake of which was also derived from other commodities. Thus, the ALARA (As Low As Reasonably Achievable) Principle should apply, as no data had been provided on the unfeasibility of reaching this level. This view was also shared by a number of delegations.

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43 ALINORM 03/12,Appendix X; CL 2003/13-FAC; and, comments submitted by Brazil (CX/FAC 04/36/18); European Community (CRD 6); India (CRD 24); and, Brazil (CRD 27).

44 ALINORM 03/41, paras. 43 – 44.

45 ALINORM 03/12, Appendix IX; CX/FAC 04/36/2-Part II; CL 2003/33-FAC; and, comments submitted by Mexico (CX/FAC 04/36/19); European Community (CRD 6); and, India (CRD 24).

46 ALINORM 03/12, para. 114.

47 ALINORM 03/41, paras. 45 – 47.

135. Other delegations noted that when JECFA performed its risk assessment on the two proposed maximum levels of 5 and 20 µg/kg, it concluded that the difference in risk at these two levels, on the basis of available data, was not significant using mean intakes and, therefore, a maximum level of 20 µg/kg was adequate to ensure public health protection. In this regard, it was noted that the risk assessment performed by JECFA was mainly based on European data. In addition, these delegations indicated that the implementation of the Code would need some time and, meanwhile, it would be appropriate to commence with a higher level in order to bring it down gradually with the implementation of the Code. The Delegation of India, supported by some delegations, emphasized that risk/benefit rather than ALARA considerations should be the basis when putting forward lower levels for contaminants.

Status of the draft Maximum Level for Ochratoxin A in Raw Wheat, Barley, Rice, and Derived Products

136. The Committee could not come to an agreement on the maximum level for ochratoxin A in raw wheat, barley, and rice. Therefore, it agreed to hold the maximum level of 5 µg/kg for Ochratoxin A in raw wheat, barley, and rye at Step 7 (see Appendix XVII), while placing it on the Priority List for Evaluation by JECFA (see para. 208 and Appendix XXVII).

137. The Committee also agreed, depending upon the available data, that JECFA should perform a comprehensive risk assessment by 2006, so that the Committee might reconsider this issue in the light of the outcome of the JECFA evaluation at its Session in 2007.

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN PEANUTS (Agenda item 14c)[48]

138. The 26th Session of the Codex Alimentarius Commission adopted the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts at Step 5 and advanced it to Step 6 as proposed by the 35th Session of the Committee[49].

139. The Committee agreed with the amendment to paragraph 56 as proposed by the *ad hoc* Working Group on Contaminants and Toxins in Foods[38] and considered some additional amendments, namely: the reference to "interested parties" instead of "all persons" and to "producing and handling" as handling was a critical point in the control of aflatoxin contamination in this product (paragraph 1); the inclusion of a number of soil pests to indicate that plants so infested should also be harvested separately as the infestation might cause damage to the pods which could facilitate fungal contamination (paragraph 22); and, a new sentence mentioning parameters linked to critical control points (paragraph 60). The Committee noted a number of other proposals for amendments from the Delegation of India in paragraphs 13, 17 and 40 but concluded that the current wording of the Code adequately covered the specific concerns raised by the Delegation.

Status of the draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts

140. The Committee forwarded the draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts to the Codex Alimentarius Commission for final adoption at Step 8 (see Appendix XV)

PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN TREE NUTS (Agenda item 14d)[50]

141. The 35th Session of the CCFAC agreed that a drafting group under the direction of China would revise the proposed draft Code for circulation, comments at Step 3 and consideration by the next Session of the Committee[51].

142. The Committee agreed with the amendments as proposed by the *ad hoc* Working Group on Contaminants and Toxins in Foods[38] and decided to advance the amended text in the Step procedure.

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48 ALINORM 03/12A, Appendix XI; CL 2003/33-FAC; and, comments submitted by Mexico, and Argentina (CX/FAC 04/36/20); European Community (CRD 6); and, India (CRD 24).

49 ALINORM 03/12A, para. 136 and ALINORM 03/41, Appendix VI.

50 CX/FAC 04/36/21; CX/FAC 04/36/21-Add.1 (not issued) and, comments submitted by India (CRD 24).

51 ALINORM 03/12A, para. 131.

Status of the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts

143. The Committee forwarded the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts to the Codex Alimentarius Commission for preliminary adoption at Step 5 (see Appendix XX).

DISCUSSION PAPER ON AFLATOXINS IN TREE NUTS (OTHER THAN ALMONDS, HAZELNUTS, AND PISTACHIOS) INCLUDING INFORMATION SUBMITTED ON AFLATOXIN CONTAMINATION AND METHODS OF ANALYSIS FOR THE DETERMINATION OF AFLATOXINS IN TREE NUTS (Agenda Item 14 e)[52]

144. The 35th Session of the CCFAC agreed that the Delegation of Iran would revise the Discussion Paper on Aflatoxins in Tree Nuts (other than almonds, hazelnuts, and pistachios), including information submitted on Methods of Analysis for the Determination of Aflatoxins in Tree Nuts, for circulation, comments, and consideration at its next Session.

Discussion Paper

145. The Committee agreed to address only Brazil nuts as the other tree nuts mentioned in the Discussion Paper (e.g. cashew nut, macadamia, pecan, pine nut, walnut, etc.) had a lower incidence of aflatoxin contamination and their volume in international trade were not significant. However, some delegations noted that international trade in the other tree nuts was growing and in certain cases their consumption was higher than peanuts. They indicated that data on aflatoxin contamination in other tree nuts should be collected with a view to setting maximum levels at a later stage.

146. The Delegation of Ireland, speaking on behalf of the Member States of the EC, supported the recommendation to limit consideration to Brazil nuts, to call for further data on a in-shell/shelled basis but indicated that, given the fact that aflatoxins were amongst the most potent carcinogenic substances known and were mutagenic, possible maximum levels must be set following the ALARA Principle.

147. The Delegation of the United States, supported by a number of delegations, objected to the introduction of a reference to the ALARA Principle in the Discussion Paper, when JECFA had made the determination that there was no difference between a level of 20 µg/kg and 10 µg/kg for Aflatoxin B1, the most potent aflatoxin. The concern was that ALARA was going beyond that which was appropriate to ensure consumer health protection and fair trade practices in the commodities of concern.

148. The Committee agreed that the Delegation of Iran would prepare a revised Discussion Paper on Aflatoxin Contamination in Brazil Nuts which should consider, in-shell/shelled (peeled/unpeeled) Brazil nuts. The revision, for circulation, comments, and consideration at the next Session of the Committee, should be made on the basis of the written comments submitted to and made at the current Session and should take into account the ALARA Principle with due consideration of the JECFA assessment.

Sampling Plans for Aflatoxins in Almonds, Brazil Nuts, Hazelnuts, and Pistachios

149. The Committee agreed to commence work on the development of sampling plans for aflatoxins in almonds, Brazil nuts, hazelnuts, and pistachios, subject to approval as new work by the Codex Alimentarius Commission. The Committee also agreed that, once finalized, the sampling plans should be sent to the Codex Committee on Methods of Analysis and Sampling for endorsement. The Committee further agreed that a working group led by the United States with the assistance of Argentina, Brazil, Iran, EC, and the INC would prepare sampling plans for aflatoxins in almonds, Brazil nuts, hazelnuts, and pistachios for circulation, comments, and consideration by the next Session of the Committee.

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[52] CX/FAC 04/36/22; and, comments submitted by Cuba (CX/FAC 04/36/22-Add.1); European Community (CRD 6); and, Brazil (CRD 27).

150. In this regard, the Committee agreed to request the Codex Alimentarius Commission to amend paragraph 4 of the Critical Review[53] to include a reference to "methods of analysis and sampling plans" as part of the items that, together with the maintenance of the General Standard for Food Additives, the General Standard for Contaminants and Toxins, the Food Category System, and the International Numbering System, should be subject to procedures established by the Committees concerned, when deciding to undertake revision or new work such as the development of methods of analysis and sampling plans as they were in close relation with the setting of maximum levels of contaminants and the maintenance of the GSCTF.

Methods of Analysis for Aflatoxins in Tree Nuts

151. The Committee noted that there was no need for the Committee to work on the development of methods of analysis for the determination of aflatoxins in tree nuts as some methods were already developed in the Codex Committee on Methods of Analysis and Sampling while the development of additional methods could be taken up by this Committee upon request of CCFAC.

MAXIMUM LEVELS FOR AFLATOXINS IN TREE NUTS (ALMONDS, HAZELNUTS, AND PISTACHIOS) – Proposals submitted (Agenda item 14 f)[54]

152. The 35th Session of the CCFAC considered a Discussion Paper on Aflatoxins in Tree Nuts, including information submitted on Aflatoxin Contamination and Methods of Analysis for the Determination of Aflatoxins in Tree Nuts. On the basis of the data presented, the Committee agreed to the elaboration of maximum levels for aflatoxins in almonds, hazelnuts, and pistachios[55]. The 26th Session of the Codex Alimentarius Commission approved the elaboration of maximum levels for these three tree nuts as new work for the Committee[56].

153. The Delegation of the EC, indicated that maximum levels for aflatoxins should be set by following the ALARA Principle and proposed to have two separate levels for total aflatoxins and aflatoxin B1 of 10 µg/kg (total aflatoxins) and 5 µg/kg (aflatoxin B1), respectively, in almonds, hazelnuts, and pistachios for further processing and 4 µg/kg (total aflatoxins) and 2 µg/kg (aflatoxin B1) in these tree nuts for direct human consumption.

154. The Delegation of the United States, supported by a number of delegations, stated that the ALARA Principle should be based on JECFA risk assessment and that the health risk at a maximum level of 20 µg/kg for total aflatoxins in nuts was negligible and would not cause undue disruption in international trade. In this regard, the Observer of the INC noted that 44% of tree nuts rejections in the European Union from 1998 to 2002 would have been avoided at a maximum level of 15 µg/kg for total aflatoxins.

155. Based on the proposal of the Delegation of Iran, supported by a number of delegations including Argentina, Brazil, Cuba, India, Kenya, South Africa, and Turkey, the Committee agreed to set up a proposed draft maximum level of 15 µg/kg (total aflatoxins) for unprocessed and processed almonds, hazelnuts, and pistachios, and to circulate it for comments at Step 3 and consideration at its next Session (see Appendix XXV). The Delegations of the EC, Czech Republic, Hungary, Norway, Poland, and Romania expressed their reservation on this decision.

MAXIMUM LEVELS FOR DEOXYNIVALENOL (DON) – Proposals submitted (Agenda Item 14g)[57]

156. The 35th Session of the CCFAC agreed to discontinue the consideration of the Discussion Paper on Deoxynivalenol, including information and data submitted on the occurrence of deoxynivalenol in cereals and to commence work on the elaboration of maximum levels for deoxynivalenol[58]. The 26th Session approved the development of maximum levels for deoxynivalenol as new work for the Committee[59].

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53 ALINORM 04/27/33, Appendix III-Part 2: Critical Review, paragraph 4.

54 CL 2003/13-FAC; and, comments submitted by Argentina, Brazil (CX/FAC 04/36/23); European Community (CRD 6); Iran (CRD 9); India (CRD 24); and, Brazil (CRD 27).

55 ALINORM 03/12A, paras 129 – 130.

56 ALINORM 03/41, Appendix VIII.

57 CL 2003/13-FAC; and, comments submitted by Japan (CX/FAC 04/36/24); European Community (CRD 6); and, India (CRD 24).

58 ALINORM 03/12A, para. 182.

59 ALINORM 03/41, Appendix VIII.

157. The Committee had an exchange of views on the appropriateness of setting maximum levels for deoxynivalenol at this time. The Committee felt that more work needed to be done before moving towards the establishment of maximum levels as there were currently insufficient data from most regions of the world to have a scientific basis to establish maximum levels for DON. The Committee recognized that, based on the data collected, a refined exposure assessment of DON in selected commodities i.e. raw cereal grains or processed cereal-based commodities should be performed by JECFA to ensure food safety and the availability of cereal-based foods on a global basis.

158. The Committee agreed to discontinue the consideration of maximum levels for deoxynivalenol for the time being. Instead, it agreed to request information on: the occurrence of deoxynivalenol in cereals; the influence of processing, decontamination, sorting, etc. to lower the level of DON in a lot; national levels or guideline levels for DON; sampling procedures and methods of analysis; etc. for consideration by the next Session of the Committee.

MYCOTOXIN CONTAMINATION IN SORGHUM – Information and data submitted (Agenda Item 14h)[60]

159. The 35th Session of the CCFAC agreed to solicit data on mycotoxin contamination in sorghum for consideration at its 36th Session[61].

160. The Committee noted that working paper CX/FAC 04/36/25 could not be prepared because no data were received in response to CL 2003/13-FAC. In recognizing that sorghum was an important crop for many countries, in particular developing countries, and because of the need to move towards the establishment of maximum levels, the Committee agreed to request information on: source of contamination; type of mycotoxin involved; analytical methods and sampling procedures; consumer protection from the point of view of health; actual and potential problems in international trade; work already undertaken by other international organizations; etc. for discussion at its next Session.

INDUSTRIAL AND ENVIRONMENTAL CONTAMINANTS IN FOODS (AGENDA ITEM 15)

DRAFT MAXIMUM LEVEL FOR LEAD IN FISH - including Statistical Analysis of data on lead content for significantly traded fish species that might cause problems in international trade (Agenda Item 15a)[62]

161. The 35th Session of the CCFAC could not reach consensus on the draft maximum level for lead in fish and returned the draft maximum levels to Step 6 for comments and further consideration at its next Session. The Committee agreed that, in the interim, a statistical analysis should be performed based on the comments submitted and additional data available using different levels of concern (e.g., 0.2, 0.4 and 0.5 mg/kg) as a basis for making a decision on whether or not to adopt a tiered approach. It was noted that the analysis should provide information on the percentage of rejected samples using different maximum levels for species traded internationally in significant quantities[63].

162. In introducing the paper, the Delegation of Denmark explained that due to the lack of data, it could not provide a further in-depth analysis on the impact of different maximum levels and that Table 4 presented in working document CX/FAC 04/36/26 was a compilation of the species that had been internationally traded based on the data from the EC, FAO and WHO.

163. The Committee noted that the list was not an exhaustive one and it was proposed only to facilitate the consideration of maximum levels. The Committee stressed the need to take into account the results of the JECFA evaluation (53rd Meeting, June 1999) in future consideration of maximum levels of lead in fish. The difficulties for many countries to achieve levels lower than 0.2 mg/kg and to effectively analyze levels lower than 0.4 mg/kg were also noted.

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60 CL 2003/13-FAC ; CX/FAC 04/36/25 (not issued); and, comments submitted by India (CRD 24).

61 ALINORM 03/12A, para. 196.

62 ALINORM 03/12, Appendix XIII; CX/FAC 04/36/26; CL 2003/13-FAC; and, comments submitted by Japan, Philippines, South Africa, Spain, and IFAC (CX/FAC 04/36/26-Add.1); European Community (CRD 10); Philippines (CRD 14); India (CRD 24); and, Brazil (CRD 27).

63 ALINORM 03/12A, paras 141-142.

164. The Committee agreed to maintain the draft maximum level for lead in fish at Step 7. It agreed to further elaborate the list in Table 4 of working document CX/FAC 04/36/26 following the structure of the Table presented by the EC in CRD 10. Therefore, the Committee agreed to request comments on the list of the main internationally traded fish species (see Appendix XIX), information on additional fish species internationally traded to be included in the list, and information on levels of lead contamination for further consideration at the next Session. The Committee noted the kind offer of the Delegation of Denmark to update the list prior to the next CCFAC Session.

Status of the draft Maximum Level for Lead in Fish

165. The Committee agreed to retain the draft maximum level of 0.2 mg/kg for lead in fish at Step 7 (see Appendix XVIII) and to review the level at its next Session in the light of the result of the assessment of the 53rd JECFA Meeting, the list of the main internationally traded fish to be elaborated by Denmark, and comments received.

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF LEAD CONTAMINATION IN FOODS (Agenda Item 15 b)[64]

166. The Committee noted that the 26th Session of the Codex Alimentarius Commission adopted at Step 5 and advanced to Step 6 the proposed draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods as proposed by the 35th Session of the Committee[65].

167. The Committee agreed with the amendment as proposed by the *ad hoc* Working Group on Contaminants and Toxins in Foods[38] and considered some additional amendments, namely : the deletion of the sentence referring to the JECFA evaluation in 1987 in paragraph 1; and, the addition of a new phrase in paragraph 44 for consistency with language in paragraph 42.

Status of the draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods

168. The Committee forwarded the draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods to the Codex Alimentarius Commission for final adoption at Step 8 (see Appendix XVI).

PROPOSED DRAFT MAXIMUM LEVELS FOR TIN (Agenda Item 15 c)[66]

169. The 35th Session of the CCFAC could not reach consensus on the draft maximum levels for tin and decided to return (with the revised product descriptors) the levels to Step 3 for comments and further consideration at its 36th Session. In addition, the Committee decided to ask JECFA to evaluate current tin levels in "canned foods other than beverages" and "canned beverages", and to determine an acute reference dose[67].

170. The Committee noted that the re-evaluation of inorganic tin, scheduled for consideration by the 64th JECFA Meeting, would facilitate risk management decisions. The Joint Secretariat to JECFA commented that new data were available. The Delegation of the EC recalled that possible gastric irritation had been reported at the proposed draft maximum levels. The Delegation suggested that the JECFA assessment should, when possible, among other issues, take into consideration the population sensitivity to tin intake when considering these new data. The Delegation of the United States requested JECFA to assess the likelihood of these effects at the proposed draft maximum levels.

Status of the proposed draft Maximum Levels for Tin

171. In view of the next JECFA re-evaluation, the Committee decided to hold the current levels of 250 mg/kg (canned foods other than beverages) and 200 mg/kg (canned beverages) at Step 4 (see Appendix XXIV), and reconsider these levels in the light of the 64th JECFA re-evaluation.

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64 ALINORM 03/12A, Appendix XII; CL 2003/33-FAC; CX/FAC 04/36/27 (not issued).

65 ALINORM 03/12, para. 152 and ALINORM 03/41, Appendix VI.

66 ALINORM 03/12A, Appendix XIII; CL 2003/13-FAC; and, comments submitted by Australia, Poland, and Sudan (CX/FAC 04/36/28); European Community (CRD 10); and, India (CRD 24).

67 ALINORM 03/12A, paras 160-161.

PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF TIN CONTAMINATION IN FOODS (Agenda Item 15d)[68]

172. The Committee noted that the 26th Session of the Codex Alimentarius Commission approved the elaboration of a proposed draft Code of Practice for the Prevention and Reduction of Tin Contamination in Foods as new work for the Committee[69].

173. The Committee agreed with the amendments by the *ad hoc* Working Group on Contaminants and Toxins in Foods[38] and considered some minor amendments, namely: in paragraph 21 the term "normal" was change to "high"; and, in Section "Processing" the second sentence of the last bullet was amended to read "*Cans that are not adequately cooled can …*".

Status of the proposed draft Code of Practice for the Prevention and Reduction of Tin Contamination in Foods

174. The Committee forwarded the renamed proposed draft Code of Practice for the Prevention and Reduction of Inorganic Tin Contamination in Canned Foods to the Codex Alimentarius Commission for preliminary adoption at Step 5 (see Appendix XXI).

PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM (Agenda Item 15 e)[70]

175. The 35th Session of the CCFAC decided to return the proposed draft maximum levels for cadmium in rice, polished; soybean (dry); molluscs (including cephalopods); and, peanuts to Step 3 and to forward the remaining proposed draft maximum levels to the 26th Session of the Codex Alimentarius Commission for adoption at Step 5[71]. The 26th Session of the Codex Alimentarius Commission decided to return the proposed draft maximum levels to Step 3[72].

176. The Committee decided to discontinue the work on developing maximum levels for cadmium in fruits; meat of cattle, pigs, sheep, and poultry; horse meat; herbs, fungi (edible); celeriac; soybeans (dry); and, peanuts as no levels were necessary because these foods were no major contributors to cadmium intake.

177. The Delegation of Japan proposed a maximum level of 0.4 mg/kg for cadmium in polished rice. The Delegation explained that the level of 0.2 mg/kg was not achievable in Japan as a result of the higher background levels of cadmium due to geological characteristics of the soil. The Delegation also explained that the probabilistic exposure assessment conducted by Japan using national data revealed that the level of 0.4 mg/kg would not cause any public health concern. This position was supported by several other delegations. The Delegation of the EC mentioned that the PTWI could be easily exceeded by consuming rice containing cadmium at this maximum level especially for young children.

178. In view of the above discussion, the Committee decided to replace the current proposed draft maximum level of 0.2 mg/kg for polished rice by a proposed draft ML of 0.4 mg/kg. The Committee further decided to forward the proposed draft maximum levels for cadmium in rice, polished; wheat grain; potato; stem and root vegetables; leafy vegetables; and, other vegetables, to the Codex Alimentarius Commission for preliminary adoption at Step 5.

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68 CX/FAC 04/36/29; and, comments submitted by Canada (CX/FAC 04/36/29-Add. 1); and, the European Community (CRD 10).

69 ALINORM 03/12A, para. 162 and ALINORM 03/41, Appendix VIII

70 ALINORM 03/12A, Appendix XIV; CX/FAC 04/36/2-Part II; CL 2003/13-FAC; CL 2003/33-FAC; and, comments submitted by Argentina, Australia, Canada, Japan, Mexico, New Zealand, Poland, USA, and CIIA (CX/FAC 04/36/30); European Community (CRD 10); Philippines (CRD 14); Indonesia (CRD 21); and, India (CRD 24).

71 ALINORM 03/12A, para. 165.

72 ALINORM 03/41, paras. 125 – 126.

179. The Committee had an extensive discussion on the maximum levels for and the classification of molluscs. Several delegations expressed concern that the proposed level of 1.0 mg/kg was not reasonably achievable for oysters, scallops, and cephalopods when included the viscera due to the natural occurrence of the cadmium contamination at higher levels than 1.0 mg/kg. The Committee considered a proposal to divide the category IM 0150 Molluscs (including cephalopods) in three sub-categories IM 0151 Marine bivalve molluscs, IM 1005 Scallops without digestive caecum, and IM 0152 Cephalopods with maximum levels of 1.0, 1.0, and 2.0 mg/kg respectively. The Committee also noted a proposal to break out oysters at a proposed ML of 3.0 mg/kg or to remove oysters from the proposed maximum levels.

180. The Committee could not agree on the maximum levels and classification of the category IM 0150 Molluscs (including cephalopods) and decided to leave it unchanged while JECFA undertook its exposure assessment in 2005.

181. The Committee agreed to request JECFA to conduct risk assessments for rice, polished; wheat grain; potato; stem and root vegetables; leafy vegetables; other vegetables; and molluscs, taking into account three different levels, i.e., the proposed draft maximum levels, one level lower and one level higher than the proposed draft maximum levels, with distribution curves for the cadmium contamination in these foods. JECFA agreed to evaluate exposure for additional levels in the sub-categories of molluscs and to inform the Committee on the basis of the data submitted. The Committee noted that JECFA would carry out the exposure assessment in February 2005 and encouraged Codex Members to submit their raw national occurrence and consumption data to WHO GEMS/Food.

Status of the proposed draft Maximum Levels for Cadmium

182. The Committee forwarded the proposed draft maximum levels for cadmium in rice polished; wheat grain; potato; stem and root vegetables; leafy vegetables; and, other vegetables to the Codex Alimentarius for preliminary adoption at Step 5 while returning the proposed draft maximum level for molluscs (including cephalopods) to Step 3 for circulation, comments, and consideration at its next Session (see Appendix XXIII).

PROPOSED DRAFT CODE OF PRACTICE FOR SOURCE DIRECTED MEASURES TO REDUCE DIOXIN AND DIOXIN-LIKE PCB CONTAMINATION IN FOODS (Agenda Item 15 f)[73]

183. The 35th Session of the CCFAC agreed that the proposed draft Code of Practice for Source Directed Measures to Reduce Dioxin and Dioxin-Like PCB Contamination of Foods would be revised by a drafting group for circulation, comments at Step 3, and further consideration at the current Session.

184. The Committee agreed with the recommendations of the *ad hoc* Working Group on Contaminants and Toxins in Foods[38] that the proposed draft Code should be revised to: (a) include the relevant parts of the Introduction and Global source directed measures into the Code of Practice; (b) rephrase the references to the Persistent Organic Pollutants (POP) Convention and to clarify paragraph 24 with regard to the reference to the Codex Alimentarius Commission; (c) soften the language into a more descriptive wording; and, (d) remove the explicit reference to (supra)national legislation.

Status of the proposed draft Code of Practice for Source Directed Measures to Reduce Dioxin and Dioxin-like PCB Contamination in Foods

185. The Committee returned the proposed draft Code of Practice for Source Directed Measures to reduce Dioxin and Dioxin-like PCB Contamination in Foods to Step 2 for revision by a working group led by Germany, with the assistance of Australia, Belgium, Canada, China, EC, Finland, Iceland, Japan, United States, IBFAN, and IDF, for circulation, comments at Step 3, and further consideration at the next Session of the Committee.

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[73] CX/FAC 04/36/31; and, comments submitted by Canada, United States, and IBFAN (CX/FAC 04/36/31-Add. 1); Malaysia (CRD 15); European Community (CRD 18); India (CRD 24); and, Brazil (CRD 27).

POSITION PAPER ON DIOXINS AND DIOXIN-LIKE PCBS (Agenda item 15 g)[74]

186. The 35th Session of the CCFAC requested the Delegation of the Netherlands to revise the Position Paper on the basis of written comments submitted. It also agreed that the document should include a new section to cover ranges of data on background levels of dioxins and dioxin-like PCBs in food and feed, with a view to identifying sources of contamination by these compounds[75].

187. The Committee noted that the paper provided an overview of available information on source and occurrence in food and feed, the dietary intake of dioxins and dioxin-like PCBs, and also presented information on existing legislation and methods of analysis.

188. The Committee agreed with the recommendations of the *ad hoc* Working Group on Contaminants and Toxins in Foods[38]. The Committee noted that the Delegation of the Netherlands would update the paper in the light of the comments received for a possible future consideration. The Committee encouraged Codex Members to submit data on dioxins and dioxin-like PCBs in foods to the WHO GEMS/Food database. In addition, it agreed to request WHO to report in a detailed way to the Committee on the data submitted within three years time.

189. In view of the above, the Committee agreed to discontinue the consideration of the Position Paper.

POSITION PAPER ON CHLOROPROPANOLS (Agenda item 15 h)[76]

190. The 35th Session of the CCFAC agreed that the Delegation of the United Kingdom would revise the Position Paper on Chloropropanols on the basis of its discussions, written comments submitted and data to be made available for circulation, comments, and further consideration at its next Session. The Committee also agreed that the document should include proposals for the elaboration of maximum levels for chloropropanols in the relevant foods[77].

191. The Delegation of the United Kingdom informed the Committee that the paper could not be made available to the Committee due to the lack of data on relevant commodities and because the study carried out in the European Community was not yet published. In addition, the Delegation indicated that there was a proposed draft Codex Standard for Soy Sauce scheduled for discussion at the 22nd Session of the Codex Committee on Processed Fruits and Vegetables (September 2004) that would include definitions for various types of soy sauce and that it might be advisable to wait for the completion of this Standard before setting a maximum level for chloropropanol in this product.

192. Some delegations were of the view that there was enough scientific basis to establish a maximum level for 3-monochloropropane-1,2-diol (3-MCPD) in acid-hydrolysed vegetable proteins (acid-HVPs) at a level of 1 mg/kg on a dry basis, equivalent to 0.4 mg/kg on a liquid basis. The Delegation of the EC was of the opinion that a maximum level of 0.02 mg/kg in 40% liquid basis was appropriate. In addition, the Delegation of Thailand suggested that if the Committee decided to set maximum levels for 3-MCPD in products using acid-HVP a risk assessment at different levels should be requested to JECFA. Other delegations were of the opinion that more data should be available for JECFA to update the risk assessment before setting any maximum level for chloropropanols. These delegations favoured the development of a discussion paper containing proposals for the elaboration of maximum levels for chloropropanols in the relevant foods.

193. The Committee agreed to commence work on the establishment of a maximum level for 3-MCPD in acid-HVPs and acid-HVP containing products subject to approval as new work by the Codex Alimentarius Commission while requesting comments on proposals for maximum levels for chloropropanol in these commodities.

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74 CX/FAC 04/36/32; and, comments submitted by Germany, and Japan (CX/FAC 04/36/32-Add. 1); Malaysia (CRD 15); European Community (CRD 18); and, Brazil (CRD 27).

75 ALINORM 03/12A, para. 169.

76 CX/FAC 04/36/33 (not issued); CX/FAC 04/36/33-Add. 1 (not issued); and, comments submitted by IHPC (CRD 12); and, Philippines (CRD 14).

77 ALINORM 03/12A, para. 179.

194. In addition, the Committee agreed that a working group under the direction of the United Kingdom with the assistance of Australia, Canada, China, EC, Japan, Korea, Philippines, Russia, Thailand, United States, and IHPC would prepare an updated Discussion Paper on Chloropropanols with proposals for maximum levels for 3-MCPD in acid-HVPs and foods containing acid-HVP for circulation, comments, and consideration at the next Session of the Committee.

DISCUSSION PAPER ON ACRYLAMIDE (Agenda item 15i)[78]

195. The 35th Session of the CCFAC agreed that a working group led by the United Kingdom and the United States would prepare a Discussion Paper on Acrylamide for circulation, comments, and consideration at its current Session. The Delegation of the United Kingdom briefly introduced the Discussion Paper and asked the Committee to comment on the recommendations to JECFA as proposed in the document.

196. The Committee noted the importance of reducing the level of acrylamide in foods and that progress had already been made to reduce these levels in certain commodities based on current information. The Delegation of Sudan stressed the importance of making available to developing countries analytical methods for the determination of acrylamide in foods.

197. The Committee agreed with the recommendations of the *ad hoc* Working Group on Contaminants and Toxins in Foods[38] to forward to FAO and WHO the following terms of reference for the JECFA evaluation on acrylamide, scheduled in February 2005:

(a) To comment on the extent to which acrylamide is bioavailable in food and on the safety implications;

(b) To consider the threshold based endpoints of concern, such as neurotoxicity and reproductive toxicity, and eventually derive a tolerable dietary intake;

(c) To evaluate the degree of uncertainty related to the assessments made;

(d) To provide estimates of dietary exposure for various population groups, including susceptible groups such as young children and regional population, and identify and quantify as far as possible the major sources (e.g., food groups/commodities) of dietary exposure;

(e) To provide estimates of margins of exposure safety and/or exposure for various endpoints of concern (non-cancer and cancer). These estimates should include comparisons between the levels of acrylamide exposure shown to produce effects in animal studies and the demonstrated no-effect levels versus estimates of dietary exposure for humans;

(f) To provide quantitative estimates of risk for various endpoints, including cancer, for varying degrees of dietary exposure to acrylamide; and,

(g) To provide comments on the toxicological significance of the main metabolite glycidamide, and whether this may be more genotoxic than the parent compound.

198. The Committee also agreed that the Discussion Paper on Acrylamide would be revised, taking into account comments submitted and discussions in the Session, by a working group led by the United Kingdom and the United States, with the assistance of the EC, Japan, Korea, Sweden, CIAA, ICGMA, and INC for circulation, comments, and further consideration at its next Session.

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78 CX/FAC 04/36/34; and, comments submitted by Canada, Denmark, and Sweden (CX/FAC04/36/34-Add.1); Germany (CRD 8); European Community (CRD 10); Belgium (CRD 13); and, the Netherlands (CRD 22).

PROPOSED DRAFT REVISED CODEX GUIDELINE LEVELS FOR RADIONUCLIDES IN FOODS FOLLOWING ACCIDENTAL NUCLEAR CONTAMINATION FOR USE IN INTERNATIONAL TRADE (CAC/GL 5-1989), INCLUDING GUIDELINE LEVELS FOR LONG-TERM USE (Agenda Item 16)[79]

199. The 35th Session of the CCFAC requested the International Atomic Energy Agency (IAEA), in collaboration with the Delegation of Finland, to prepare a revised version of the Codex Guideline Levels for Radionuclides in Foods Following Accidental Nuclear Contamination for Use in International Trade for circulation, comments at Step 3, and further consideration at its 36th Session[80]. The 26th Session of the Codex Alimentarius Commission approved as new work the revision of the Codex Guideline Levels for Radionuclides in Foods Following Accidental Nuclear Contamination for Use in International Trade (CAC/GL 5-1989), including Guideline Levels for Long-Term Use[81].

200. In presenting the newly named "Revised Codex Guideline Levels for Radionuclides in Foods for Use in International Trade", the Representatives of the IAEA informed the Committee that the revision was based on an intervention exemption level of 1 mSv from annual consumption of food containing artificial radionuclides at the Guideline Levels. Naturally-occurring radionuclides were excluded from consideration in the document because the resources required to calculate exposures would be out of proportion to the health benefits achieved. Twenty radionuclides were selected for consideration because of their importance in relation to uptake into the food chain and because of the large quantities of these contained in nuclear facilities or industrial radiation sources, which could potentially contaminate foods because of an accident or malevolent act.

201. It was further noted that appropriate human exposure and health risk assessments had been conducted both for infants and adults during the first year after a major radionuclide release into the environment and for the long term. Statistical data of the FAO on production and import of major foodstuffs had been used in order to make a realistic assessment. As a result, the proposed draft revised Guideline Levels covered both the immediate aftermath of emergencies or malevolent acts and prolonged exposure situations. The list of radionuclides for which the Guideline Levels were proposed had been substantially extended, and they covered most of the realistic food contamination conditions.

202. In noting the comments made by the Delegation of the EC, the Representative of the IAEA proposed to amend Table 1 of the document, i.e., to introduce an additional safety factor for the actinides (Plutonium (Pu) and Americium (Am)) while taking into account assessment uncertainty. It was also noted that, in consideration that Technetium-99 (^{99}Tc) was basically present in the marine environment (seafood) and could not contribute substantially to ingestion by infants, the Guideline Level for ^{99}Tc could be based on the assessment for adults and increased correspondingly.

203. The Delegation of the EC welcomed certain elements of the text suggested at the current Session by the IAEA, in particular the reduction of the guideline levels for actinides. However, in view of the reservations of the Delegation of the EC, in particular concerning the deletion of a category for "infant foods", it was suggested that this should be further considered at the next Session of the CCFAC. The Delegation of the United States noted that the latest IAEA revisions were compatible to recently published draft United States policy.

Status of the Proposed Draft Revised Codex Guideline Levels for Radionuclides in Foods Following Accidental Nuclear Contamination for Use in International Trade (CAC/GL 5-1989), including Guideline Levels for Long-Term Use

204. The Committee agreed on the above revisions to the text as suggested by the IAEA and forwarded the newly named proposed draft Codex Guideline Levels for Radionuclides in Foods for Use in International Trade to the Codex Alimentarius Commission for preliminary adoption at Step 5 (see Appendix XXII).

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79 CX/FAC 04/36/35; CX/FAC 04/36/35-Add. 1 (not issued); and, comments submitted by the European Community (CRD 18).

80 ALINORM 03/12A, paras. 79 and 84.

81 ALINORM 03/41, Appendix VIII.

PRIORITY LIST OF FOOD ADDITIVES, CONTAMINANTS AND NATURALLY OCCURING TOXICANTS PROPOSED FOR EVALUATION BY JECFA (Agenda Item 17)

COMMENTS SUBMITTED (AGENDA ITEM 17A)[82]

205. The 35th Session of the CCFAC agreed to request comments for additions or amendments to its Priority List for consideration at the current Session. Mr J. Dornseiffen (the Netherlands) introduced the report of the Working Group on JECFA Priorities. He noted that most of the food additives and contaminants that had been added to the Priority List at the 35th Session of the Committee were due for evaluation by the 63rd and 64th Meetings of JECFA.

REPORT OF THE WORKING GROUP ON THE JECFA PRIORITY LIST (AGENDA ITEM 17B)[83]

206. The Working Group proposed the addition of the following food additives to the CCFAC list of priorities: approximately 400 flavouring agents, 6 annatto extracts, aspartame-acesulfame salt, laccase from *Myceliophora thermophila* expressed in *Aspergillus oryzae*, phospholipase from *Fusarium venenatum* expressed in *Aspergillus orizae*, pullulan, stearyl tartrate, quillaia extracts, sucralose, and sucrose esters of fatty acids.

207. The Committee noted that the Delegation of the United States would make available to the Joint Secretariat to JECFA by the end of this year some missing information about the list of flavouring agents proposed for evaluation. It was noted that these additional flavours were all substances of chemical classes that had been evaluated at previous meetings of JECFA.

208. The Working Group proposed the addition of the following contaminants to the CCFAC list of priorities: chloropropanols, ochratoxin A, and cadmium. In addition, the Committee added patulin to the list for the evaluation in 2007 with the understanding that more detailed questions for JECFA would be agreed upon at a future Session of the Committee.

209. The Committee noted that the Working Group on JECFA Priorities agreed that the proposed evaluation of the peroxide value (PV) for instant noodles was not a question of safety and should therefore not be proposed for evaluation by JECFA. In this regard, it was also mentioned that there were no data proving a positive correlation between peroxide values of foods and food toxicological parameters. The Committee was informed of a WHO project that would study the safety of used cooking oils.

210. The Committee agreed to the recommended additions and amendments to CCFAC's Priority List of Food Additives, Contaminants and Naturally Occurring Toxicants Proposed for the Evaluation by JECFA as presented in Appendix XXVII. The substances of highest priority were indicated by a footnote.

211. The Committee agreed to ask the Codex Secretariat, in coordination with the Joint Secretariat to JECFA, to request comments for additions or amendments to the Priority List for consideration at its next Session.

OTHER BUSINESS AND FUTURE WORK (Agenda Item 18)[84]

OTHER BUSINESS

212. The Committee noted the request of the OIV on the establishment of a maximum level of 2µg/kg for ochratoxin A in wine. The Delegation of the Netherlands indicated their intention to propose starting work on the elaboration of a Code of Practice for Prevention and Reduction of Ochratoxin A Contamination in Coffee and Cacao at the next CCFAC.

213. The Delegation of India expressed real concern about selected application of the ALARA Principle and, therefore, suggested the explanation of this Principle.

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82 CL 2003/13-FAC; CL 2003/46-FAC; CX/FAC 04/36/2-Part II; and, comments submitted by Japan, Switzerland, United States and, IDSI (CX/FAC 04/36/36); and, Denmark (CRD 11)..

83 CRD5.

84 Comments submitted by OIV (CRD 7)Comments submitted by OIV (CRD 7) and Denmark (CRD 20).

FUTURE WORK

Flavouring agents

214. The Delegation of the United States proposed that the Committee considered possible options to integrate flavouring agents into Codex system in view of the completion of several hundred recent reviews of flavours by JECFA.

215. The Committee agreed that a working group led by the United States with the assistance of the EC, Finland, Italy, India, Japan, Norway, United Kingdom, and IOFI would prepare a discussion paper, to consider possible options to integrate flavouring agents into the Codex system for circulation, comments, and consideration at its next Session.

216. In view of the magnitude of this new task and the current workload of CCFAC, the Delegation of France suggested that the Working Group addressed, in detail, the practical constraints that such a long-term project would face, particularly as to the updating of flavouring agents in a regular and timely manner.

Polycyclic aromatic hydrocarbons (PAH) contamination

217. The Delegation of Denmark proposed the development of a Code of Practice for reduction of PAH (Polycyclic Aromatic Hydrocarbons) contamination during food processing. In noting that these substances would be evaluated by JECFA in 2005, the Committee considered it premature to start elaboration of a Code of Practice and agreed that a working group led by Denmark, with the assistance of Australia, Brazil, Cuba, EC, Finland, Poland, Spain, and the United States, would prepare a discussion paper to set out the issues concerning PAHs in foods, for circulation, comments, and consideration at its next Session.

Guideline levels for methylmercury in fish

218. The Committee noted the request of the 53rd Session of the Executive Committee[85] to consider whether the current Guideline Level for Methylmercury in Fish needed to be revised in the light of the recent risk assessment performed by JECFA and/or if any other risk management options, including formulation of specific dietary advise, would be appropriate. The Committee established a working group led by the EC, with the assistance of Australia, Canada, France, India, Italy, Japan, Kenya, South Africa, and the United States to prepare a discussion paper on the possible need to revise the Guideline Level for Methylmercury in Fish including the examination of other possible management options for circulation, comments, and consideration at its next Session.

DATE AND PLACE OF THE NEXT SESSION (Agenda Item 19)

219. The Committee was informed that the 37th Session of the Codex Committee on Food Additives and Contaminants was tentatively scheduled to be held in the Netherlands from 21-25 March 2005, subject to discussion between the Dutch and Codex Secretariats.

220. The Committee noted the kind offer of the Delegation of Cuba to host a Session of the Committee in the future.

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221. The Delegation of the United States informed the Committee that this would be the last Session at which Dr Andy Ebert of IFAC would be in attendance. The Delegates recognized Dr Ebert's contribution to CCFAC and his thoughtful interventions over the past 30 years.

CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

SUMMARY STATUS OF WORK

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 04/27/12)
Draft Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants	8	27th CAC	Para. 39 and Appendix II
Draft Food Category System of the Codex General Standard for Food Additives	8	27th CAC	Para. 68 and Appendix V
Draft CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups	8	27th CAC	Para. 129 and Appendix XIV
Draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts	8	27th CAC	Para. 140 and Appendix XV
Draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods	8	27th CAC	Para. 168 and Appendix XVI
Draft and proposed draft revisions to Table 1 of the Codex General Standard for Food Additives	8 and 5/8	27th CAC	Para. 81 and Appendix VI
Specifications for the Identity and Purity of Food Additives (Category I) arising from the 61st JECFA Meeting	5/8	27th CAC	Para. 99 and Appendix XI
Proposed draft Amendments to the International Numbering System for Food Additives	5/8	27th CAC	Para. 103 and Appendix XII
Draft Maximum Level for Ochtaroxin A in Raw Wheat, Barley, and Rye	7	39th CCFAC	Para. 136 and Appendix XVII
Draft Maximum Level for Lead in Fish	7	37th CCFAC	Para. 165 and Appendix XVIII
Draft and proposed draft Food Additive Provisions of the Codex General Standard for Food Additives	6 and 3	Comments 37th CCFAC	Para. 76 and Appendix IX
Proposed draft Maximum Levels for Cadmium (rice, polished; wheat grain; potato; stem and root vegetables; leafy vegetables; and, other vegetables)	5	27th CAC Comments 37th CCFAC	Para. 182 and Appendix XXIII
Proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts	5	27th CAC Comments 37th CCFAC	Para. 143 and Appendix XX

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 04/27/12)
Proposed draft Code of Practice for the Prevention and Reduction of Inorganic Tin Contamination in Canned Foods	5	27th CAC Comments 37th CCFAC	Para. 174 and Appendix XXI
Proposed draft revised Guideline Levels for Radionuclides in Foods for Use in International Trade	5	27th CAC Comments 37th CCFAC	Para. 204 and Appendix XXII
Proposed draft Maximum Levels for Tin in Canned Beverages and Canned Foods other than Beverages	4	38th CCFAC	Para. 171 and Appendix XXIV
Proposed draft Maximum Level for Total Aflatoxins in Processed and Unprocessed Almonds, Hazelnuts, and Pistachios	3	Comments 37th CCFAC	Para. 155 and Appendix XXV
Proposed draft Maximum Level for Cadmium in Molluscs (including Cephalopods)	3	Comments 37th CCFAC	Para. 182 and Appendix XXIII
Revision to the Codex General Standard for Contaminants and Toxins in Foods	1/2/3	27th CAC Working Group Comments 37th CCFAC	Para. 126
Sampling Plans for Aflatoxins in Almonds, Brazil Nuts, Hazelnuts, and Pistachios	1/2/3	27th CAC Working Group Comments 37th CCFAC	Para. 149
Maximum Levels for 3-MCPD (Chloropropanol) in Acid-hydrolized Vegetable Proteins (acid-HVPs) and acid-HVP containing products	1/2/3	27th CAC Comments 37th CCFAC	Para. 193
Proposed draft Code of Practice for Source Directed Measures to reduce Dioxin and Dioxin-like PCB Contamination in Foods	1/2/3	Working Group Comments 37th CCFAC	Para. 185
Revision to the Preamble of the Codex General Standard for Food Additives	1	37th CCFAC	Paras. 53 - 60
Amendment to the Codex General Standard for Food Additives	---	27th CAC	Para.80 and Appendix IV
Amendment to the Codex General Standard for Contaminants and Toxins in Foods	---	27th CAC	Para. 125 and Appendix XIII
Revocation of Food Additives Provisions of the Codex General Standard for Food Additives	---	27th CAC	Para. 83 and Appendix VII
Discontinuation of draft and proposed draft Food Additive Provisions of the Codex General Standard for Food Additives	---	27th CAC	Para. 84 and Appendix VIII

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 04/27/12)
Proposed draft Code of Practice for the Safe Use of Active Chlorine	discontinued	27th CAC	Paras. 91 - 93
Maximum Levels for Patulin	discontinued	39th CCFAC	Paras. 130 - 131
Maximum Levels for Deoxynivalenol	discontinued	27th CAC	Para. 158
Proposed draft Maximum Levels for Cadmium in fruits; meat of cattle, pigs, sheep, and poultry; horse meat; herbs, fungi (edible); celeriac; soybeans (dry); and, peanuts	discontinued	27th CAC	Para. 176
Discussion Paper on Processing Aids	discontinued	---	Para. 87
Methods of Analysis for Aflatoxins in Tree Nuts	discontinued	---	Para. 151
Position Paper on Dioxins and Dioxin-like PCBs	discontinued	---	Para. 189
Discussion Paper on Carriers	---	Working Group Comments 37th CCFAC	Para. 89
Terms of Reference for a FAO/WHO Expert Consultation on Active Chlorine	---	Working Group 37th CCFAC	Para. 92
Discussion Paper on Aflatoxin Contamination in Brazil Nuts	---	Working Group Comments 37th CCFAC	Para. 148
Discussion Paper on Chloropropanols	---	Working Group Comments 37th CCFAC	Para. 194
Discussion Paper on Acrylamide	---	Working Group Comments 37th CCFAC	Para. 198
Discussion Paper on the Integration of Flavouring Agents in the Codex System	---	Working Group Comments 37th CCFAC	Para. 215
Discussion Paper on Polycyclic Aromatic Hydrocarbon Contamination in Foods	---	Working Group Comments 37th CCFAC	Para. 217
Discussion Paper on Guideline Level for Methylmercury in Fish	---	Working Group Comments 37th CCFAC	Para. 218
Report of the CCFAC Electronic Working Group	---	Working Group 37th CCFAC	Para. 70

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 04/27/12)
Report on the Working Principles of the GSFA and Relationship between CCFAC/GSFA and Commodity Committees/Codex commodity standards in relation to Food Additives	---	Working Group 37th CCFAC	Paras. 43, 59-60
Inventory of Processing Aids, updated List	---	New Zealand 37th CCFAC	Para. 88
Harmonization of Terms used by Codex and JECFA	---	Working Group Comments 37th CCFAC	Para. 107
Deoxynivalenol Contamination in Cereals	---	Comments 37th CCFAC	Para. 158
Mycotoxin Contamination in Sorghum	---	Comments 37th CCFAC	Para. 160
Provisional List of Main Internationally Traded Fish Species (including proposals for maximum levels for lead in fish in different fish species)	---	Comments Denmark 37th CCFAC	Para. 164 and Appendix XIX
Action required as a Result of Changes in the Acceptable Daily Intake Status and other Toxicological Recommendations arising from the 61st JECFA Meeting	---	Comments 37th CCFAC	Para. 21 and Appendix XXVI
Priority List of Food Additives, Contaminants and Naturally Occurring Toxicants proposed for Evaluation by JECFA	---	Comments 37th CCFAC	Paras. 78, 211 and Appendix XXVII

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DRAFT RISK ANALYSIS PRINCIPLES APPLIED BY THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

(AT STEP 8 OF THE PROCEDURE)

1. SCOPE

a) This document addresses the respective applications of risk analysis principles by the Codex Committee on Food Additives and Contaminants (CCFAC) and the Joint FAO/WHO Expert Committee on Food Additives (JECFA). For matters which cannot be addressed by JECFA, this document does not preclude the possible consideration of recommendations arising from other internationally recognized expert bodies.

2. CCFAC and JECFA

b) CCFAC and JECFA recognize that communication between risk assessors and risk managers is critical to the success of their risk analysis activities.

c) CCFAC and JECFA will continue to develop procedures to enhance communication between the two committees.

d) CCFAC and JECFA will ensure that their contributions to the risk analysis process are fully transparent, thoroughly documented and available in a timely manner to Members.

e) JECFA, in consultation with CCFAC, will continue to explore developing minimum quality criteria for data requirements necessary for JECFA to perform risk assessments. These criteria will be used by CCFAC in preparing its Priority List for JECFA. The JECFA Secretariat will consider whether these minimum quality criteria for data have been met when preparing the provisional agenda for meetings of JECFA.

3. CCFAC

f) CCFAC is primarily responsible for recommending risk management proposals for adoption by the CAC.

g) CCFAC will base its risk management recommendations to the CAC on JECFA's risk assessments, including safety assessments[1], of food additives, naturally occurring toxicants, and contaminants in food.

h) In cases where JECFA has performed a safety assessment and CCFAC or the CAC determines that additional scientific guidance is necessary, CCFAC or CAC may make a more specific request to JECFA to obtain the scientific guidance necessary for a risk management decision.

i) CCFAC's risk management recommendations to the CAC with respect to food additives shall be guided by the principles described in the Preamble and relevant annexes of the Codex General Standard for Food Additives.

j) CCFAC's risk management recommendations to the CAC with respect to contaminants and naturally occurring toxicants shall be guided by the principles described in the Preamble and relevant annexes of the Codex General Standard for Contaminants and Naturally Occurring Toxins in Food.

k) CCFAC's risk management recommendations to the CAC that involve health and safety aspects of food standards will be based on JECFA's risk assessments and other legitimate factors relevant to the health protection of consumers and for the promotion of fair practices in food trade.

l) CCFAC's risk management recommendations to the CAC will take into account the relevant uncertainties and safety factors described by JECFA.

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1 A Safety Assessment is defined as a scientifically-based process consisting of: 1) the determination of a NOEL (No Observed Effect Level) for a chemical, biological, or physical agent from animal feeding studies and other scientific considerations; 2) the subsequent application of safety factors to establish an ADI or tolerable intake; and 3) comparison of the ADI or tolerable intake with probable exposure to the agent (Temporary definition to be modified when JECFA definition will be available).

m) CCFAC will endorse maximum use levels only for those additives for which 1) JECFA has established specifications of identity and purity and 2) JECFA has completed a safety assessment or has performed a quantitative risk assessment.

n) CCFAC will endorse maximum levels only for those contaminants for which 1) JECFA has completed a safety assessment or has performed a quantitative risk assessment and 2) the level of the contaminant in food can be determined through appropriate sampling plans and analysis methods, as adopted by Codex. CCFAC should take into consideration the analytical capabilities of developing countries unless public health considerations require otherwise.

o) CCFAC will take into account differences in regional and national food consumption patterns and dietary exposure as assessed by JECFA when recommending maximum use levels for additives or maximum levels for contaminants and naturally occurring toxicants in food.

p) Before finalising proposals for maximum levels for contaminants and naturally occurring toxicants, CCFAC shall seek the scientific advice of JECFA about the validity of the analysis and sampling aspects, about the distribution of concentrations of contaminants and naturally occurring toxicants in foods and about other relevant technical and scientific aspects, including dietary exposure, as necessary to provide for a suitable scientific basis for its advice to CCFAC.

q) When establishing its standards, codes of practice, and guidelines, CCFAC will clearly state when it applies any other legitimate factors relevant to the health protection of consumers and for the promotion of fair practices in food trade, in addition to JECFA's risk assessment, and specify its reasons for doing so.

r) CCFAC's risk communication with JECFA will include prioritizing substances for JECFA review with the view towards obtaining the best available risk assessment for purposes of elaborating safe conditions of use for food additives and elaborating safe maximum levels or codes of practice for contaminants and naturally occurring toxicants in food.

s) CCFAC will consider the following when preparing its priority list of substances for JECFA review:

- Consumer protection from the point of view of health and prevention of unfair trade practices;
- CCFAC's Terms of Reference;
- JECFA's Terms of Reference;
- The Codex Alimentarius Commission's Medium-Term Plan of Work;
- The quality, quantity, adequacy, and availability of data pertinent to performing a risk assessment;
- The prospect of completing the work in a reasonable period of time;
- The diversity of national legislation and any apparent impediments to international trade;
- The impact on international trade (i.e., magnitude of the problem in international trade); and,
- Work already undertaken by other international organizations;

t) When referring substances to JECFA, the CCFAC will provide background information and clearly explain the reasons for the request when chemicals are nominated for evaluation

u) When referring substances to JECFA, CCFAC may also refer a range of risk management options, with a view toward obtaining JECFA's guidance on the attendant risks and the likely risk reductions associated with each option.

v) CCFAC will request JECFA to review any methods and guidelines being considered by CCFAC for assessing maximum use levels for additives or maximum levels for contaminants and naturally occurring toxicants. CCFAC will make any such request with a view toward obtaining JECFA's guidance on the limitations, applicability, and appropriate means for implementation of a method or guideline for CCFAC's work.

4. JECFA

w) JECFA is primarily responsible for performing the risk assessments upon which CCFAC and ultimately the CAC base their risk management decisions.

x) JECFA will select scientific experts on the basis of their competence and independence, taking into account geographical representation to ensure that all regions are represented.

y) JECFA will strive to provide CCFAC with science-based risk assessments that include the four components of risk assessment as defined by CAC and safety assessments that can serve as the basis for CCFAC's risk-management discussions. For contaminants and naturally occurring toxicants, JECFA will determine to the extent possible the risks associated with various levels of intake. Because of the lack of appropriate information, including data in humans, however, this will be possible in only a few cases in the foreseeable future. For additives, JECFA will continue to use its safety assessment process for establishing ADIs.

z) JECFA will strive to provide CCFAC with science-based quantitative risk assessments and safety assessments for food additives, contaminants, and naturally occurring toxicants in a transparent manner.

aa) JECFA will provide CCFAC with information on the applicability and any constraints of the risk assessment to the general population to particular sub-populations and will as far as possible identify potential risks to populations of potentially enhanced vulnerability (e.g., children, women of child-bearing age, the elderly).

bb) JECFA will also strive to provide CCFAC with specifications of identity and purity essential to assessing risk associated with the use of additives.

cc) JECFA will strive to base its risk assessments on global data, including that from developing countries. These data should include epidemiological surveillance data and exposure studies.

dd) JECFA is responsible for evaluating exposure to additives, contaminants, and naturally occurring toxicants.

ee) When evaluating intake of additives or contaminants and naturally occurring toxicants during its risk assessment, JECFA will take into account regional differences in food consumption patterns.

ff) JECFA will provide to CCFAC its scientific views on the validity and the distribution aspects of the available data regarding contaminants and naturally occurring toxicants in foods which have been used for exposure assessments, and will give details on the magnitude of the contribution to the exposure from specific foods as may be relevant for risk management actions or options of CCFAC.

gg) JECFA will communicate to CCFAC the magnitude and source of uncertainties in its risk assessments. When communicating this information, JECFA will provide CCFAC a description of the methodology and procedures by which JECFA estimated any uncertainty in its risk assessment.

hh) JECFA will communicate to CCFAC the basis for all assumptions used in its risk assessments including default assumptions used to account for uncertainties.

ii) JECFA's risk assessment output to CCFAC is limited to presenting its deliberations and the conclusions of its risk assessments and safety assessments in a complete and transparent manner. JECFA's communication of its risk assessments should not include the consequences of its analyses on trade or other non-public health consequence. Should JECFA include risk assessments of alternative risk management options, JECFA should ensure that these are consistent with the Working Principles for Risk Analysis for the Application in the Framework of the Codex Alimentarius and Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants.

jj) When establishing the agenda for a JECFA meeting, the JECFA Secretariat will work closely with CCFAC to ensure that CCFAC's risk management priorities are addressed in a timely manner. With respect to food additives, the JECFA Secretariat will normally give first priority to compounds that have been assigned a temporary ADI, or equivalent. Second priority will be normally given to food additives or groups of additives that have previously been evaluated and for which an ADI, or equivalent, has been estimated, and for which new information is available. Third priority will be normally given to food additives that have not been previously evaluated. With respect to contaminants and naturally occurring toxicants, the JECFA Secretariat will give priority to substances that present both a significant risk to public health and are a known or expected problem in international trade

kk) When establishing the agenda for a JECFA meeting, the JECFA Secretariat will give priority to substances that are known or expected problems in international trade or that present an emergency or imminent public health risk.

ENDORSEMENT AND/OR REVISION OF FOOD ADDITIVE AND PROCESSING AID PROVISIONS IN CODEX STANDARDS

CODEX STANDARD FOR CHOCOLATE AND CHOCOLATE PRODUCTS

Food Additives

INS No.	Food additive	Maximum level	Endorsement Status
Glazing Agents			
903	Carnauba wax	500 mg/kg	Endorsed[1] (see paras. 49 & 82)

DRAFT CODEX STANDARD FOR SALTED ATLANTIC HERRING AND SALTED SPRAT

(At Step 8)

Food Additives

INS No.	Food additive	Maximum level	Endorsement Status
Antioxidants			
310	Propyl gallate	100 mg/kg	Not Endorsed (see para. 42)

[1] The relevant Sections of the Codex Standard for Chocolate and Chocolate Products and the Codex General Standard for Food Additives would be amended upon adoption by the Commission of the proposed revisions as indicated in Appendix VI in order to keep consistency throughout the Codex system.

DRAFT CODEX GENERAL STANDARD FOR FRUIT JUICES AND NECTARS
(AT STEP 7)

Food Additives

INS No.	Food Additive	Maximum Level[2]		Endorsement Status
4.1 ACIDITY REGULATORS				
330	Citric acid	3 g/l[3]		Endorsed (see para. 47)
330	Citric acid	5 g/l (for fruit nectars)		
296	Malic acid	GMP (only for pineapple juice and fruit nectars)		
334	Tartaric acid	4g/l (only for grape juice and fruit nectars)		
4.2 ANTIOXIDANTS				
300 - 303	Ascorbic acid and its salts	GMP		Endorsed (see para. 47)
220–225, 227, 228, 539	Sulphites	50 mg/l[3, 4] (as residual SO_2)		
4.3 CARBONATING AGENTS				
290	Carbon dioxide	GMP		Endorsed (see para. 47)
4.4 PRESERVATIVES[3]				
210 – 213	Benzoic acid and its salts	1 g/l, single or in combination		Endorsed (see para. 47)
200 – 203	Sorbic acid and its salts			Endorsed (see para. 47)
4.5 SEQUESTRANTS[3]				
451(i)	Sodium tripolyphosphate	1 g/l (only to enhance effectiveness of benzoates and sorbates)		Endorsed (see para. 47)
4.6 STABILIZERS				
440	Pectins	GMP (only for cloudy juices and fruit nectars)		Endorsed (see para. 47)
4.7 SWEETENERS				
950	Acesulfame potassium	350 mg/l	(only for fruit nectars)	Endorsed (see para. 47)
951	Aspartame	600 mg/l		
952	Cyclamic acid and its salts	400 mg/l[3]		
954	Saccharin and its salts	80 mg/l		
955	Sucralose	300 mg/l		

2 As served to the consumer.
3 Subject to national legislation of the importing country.
4 Sulphites should be used only in fruit juices/nectars in bulk dispensers and in certain tropical fruit juices/nectars.

Processing Aids

Function	Substance	Maximum Level[2]	Status of Endorsement
Antifoaming Agent	Polydimethylsiloxane	10 mg/l	Not Endorsed (see para. 48)
Clarifying Agents Filtration Aids Flocculating Agents	Adsorbent clays (bleaching, natural or activated earths)	GMP	Endorsed (see para. 48)
	Adsorbent resins	GMP	
	Activated carbon (only from plants)	GMP	
	Bentonite	GMP	
	Calcium hydroxide	GMP (only in grape juice)	
	Cellulose	GMP	
	Chitosan	GMP	
	Colloidal silica	GMP	
	Diatomaceous earth	GMP	
	Gelatin (from skin collagen)	GMP	
	Ion exchange resins (cation and anion)	GMP	
	Isinglass	GMP	
	Kaolin	GMP	
	Perlite	GMP	
	Polyvinylpolypyrrolidone	GMP	
	Potassium tartrate	GMP (only in grape juice)	
	Precipitated calcium carbonate	GMP (only in grape juice)	
	Rice hulls	GMP	
	Silicasol	GMP	
	Sulphur dioxide	10 mg/l (as residual SO_2) (only in grape juice)	
	Tannin	GMP	
Enzyme preparations	Pectinases (for breakdown of pectin); Proteinases (for breakdown of proteins); Amylases (for breakdown of starch); and, Cellulases (limited use to facilitate disruption of cell walls).	GMP Enzyme preparations may be used as processing aids provided these preparations do not result in a total liquefaction and do not substantially affect the cellulose content of the processed fruit.	
Packing gas[5]	Nitrogen	GMP	
	Carbon dioxide	GMP	

[5] May also be used e.g., for preservation.

**AMENDMENTS TO THE
CODEX GENERAL STANDARD FOR FOOD ADDITIVES**

(CODEX STAN 192-1995, Rev. 4-2003)

The following amendments have been agreed to by the Codex Committee on Food Additives and Contaminats:

(1) Inclusion of a footnote 2 to Section 1.1 of the Codex General Standard for Food Additives, and

(2) Deletion of Lists A and B of the Codex General Standard for Food Additives

1. Inclusion of a footnote 2 to Section 1.1 of the GSFA:

1.1 SCOPE

1.1 PERMITTED FOOD ADDITIVES

Only the food additives listed herein are permitted for use in foods in conformance with the provisions of this Standard[1]. Only food additives which have been evaluated by the Joint FAO/WHO Expert Committee on Food Additives[2] (JECFA) and found acceptable for use in foods are included in this Standard.

1 Notwithstanding the provisions of this Section of the General Standard, the lack of reference to a particular additive or to a particular use of an additive in a food in the General Standard as currently drafted, does not imply that the additive is unsafe or unsuitable for use in food. The Commission shall review the necessity for maintaining this footnote on a regular basis, with a view to its deletion once the General Standard is substantially complete.

2 An index of food additives with most updated information on ADIs status, year of the most recent JECFA's review, the INS numbers assigned to them, etc., are available at the Joint Secretariat's web pages at FAO http://www.fao.org/es/ESN/jecfa/index_en.stm and WHO http://www.who.int/pcs/jecfa/jecfa.htm. [**under development**]

2. The following Lists should be deleted from the Codex General Standard for Food Additives:

CODEX GENERAL STANDARD FOR FOOD ADDITIVES

LIST A

JECFA-REVIEWED FOOD ADDITIVES WITH ADIS AND INS NUMBERS

(INCLUDES SYNONYMS)

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Acacia Gum			GUM ARABIC
Acetic Acid Esters of Mono- and Diglycerides			ACETIC AND FATTY ACID ESTERS OF GLYCEROL
Aceto Glycerides			ACETIC AND FATTY ACID ESTERS OF GLYCEROL
Acetylated Mono- and Diglycerides			ACETIC AND FATTY ACID ESTERS OF GLYCEROL
Aero-Glucose Dehydrogenase			GLUCOSE OXIDASE (*Aspergillus niger*, var.)
Agar-Agar			AGAR
Algaroba			CAROB BEAN GUM
Aluminium Calcium Silicate			CALCIUM ALUMINUM SILICATE (SYNTHETIC)
Ammonia Caramel			CARAMEL COLOUR, CLASS III
Ammonium Bicarbonate			AMMONIUM HYDROGEN CARBONATE
Ammonium Citrate Tribasic			TRIAMMONIUM CITRATE
Ammonium Ferric Citrate			FERRIC AMMONIUM CITRATE
Ammonium Glutamate			MONOAMMONIUM GLUTAMATE, L-
Ammonium Iron (III) Citrate			FERRIC AMMONIUM CITRATE
Ammonium Iron Citrate			FERRIC AMMONIUM CITRATE
Ammonium Muriate			AMMONIUM CHLORIDE
Ammonium Myristate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Ammonium Palmitate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Ammonium Stearate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Aqua Ammonia			AMMONIUM HYDROXIDE
Arabic Gum			GUM ARABIC
ASCORBYL ESTERS		Group ADI 1.25 mg/kg bw	ASCORBYL ESTERS
Azobisformamide			AZODICARBONAMIDE
Baking Soda			SODIUM HYDROGEN CARBONATE
BCD			CYCLODEXTRIN, BETA-
Beetroot Red			BEET RED
BENZOATES		Group ADI 5 mg/kg bw	BENZOATES
Beta-Schardinger Dextrin			CYCLODEXTRIN, BETA-
Bicarbonate of Soda			SODIUM HYDROGEN CARBONATE
Bleached Shellac			Shellac
Calcium Aluminosilicate			CALCIUM ALUMINIUM SILICATE (SYNTHETIC)
Calcium Disodium (Ethylene-Dinitrilo)-Tetraacetate			Calcium Disodium Ethylene Diamine Tetraacetate
Calcium Disodium Edetate			Calcium Disodium Ethylene Diamine Tetraacetate
Calcium Disodium EDTA			Calcium Disodium Ethylene Diamine Tetraacetate

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Calcium Dl-D-Gluconate Monohydrate			CALCIUM GLUCONATE
Calcium Dl-Gluconate			CALCIUM GLUCONATE
Calcium Glutamate			CALCIUM GLUTAMATE, DL-L-
Calcium Guanylate			CALCIUM GUANYLATE, 5'-
Calcium Inosinate			CALCIUM INOSINATE, 5'-
Calcium Malate, D,L-			CALCIUM MALATE
Calcium Myristate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Calcium Oleate			SALTS OF OLEIC ACID (Ca
Calcium Palmitate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Calcium Ribonucleotides			CALCIUM RIBONUCLEOTIDES, 5'-
Calcium Silicoaluminate			CALCIUM ALUMINIUM SILICATE (SYNTHETIC)
Calcium Stearate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Carbonic Acid Anhydride			CARBON DIOXIDE
Carob Gum			CAROB BEAN GUM
Carrageenan with Cellulose			PROCCESSED EUCHEUMA SEAWEED
Caustic Caramel			CARAMEL COLOUR, CLASS I
Caustic Potash			POTASSIUM HYDROXIDE
Caustic Soda			POTASSIUM HYDROXIDE
Cellulose Ethyl Ester			ETHYL CELLULOSE
Cellulose Gel			MICROCRYSTALLINE CELLULOSE
Cellulose Gum			SODIUM CARBOXYMETHYL CELLULOSE
Cellulose Hydroxypropyl Ether			HYDROXYPROPYL CELLULOSE
Cellulose Methyl Ether			METHYL CELLULOSE
Chalk			CALCIUM CARBONATE
Chlorine (IV) Oxide			CHLORINE DIOXIDE
Chlorine Peroxide			CHLORINE DIOXIDE
Citrem			CITRIC AND FATTY ACID ESTERS OF GLYCEROL
Citric Acid Esters of Mono- and Di-Glycerides			CITRIC AND FATTY ACID ESTERS OF GLYCEROL
Citric Acid Triammonium Salt			TRIAMMONIUM CITRATE
Citroglycerides			CITRIC AND FATTY ACID ESTERS OF GLYCEROL
CMC			SODIUM CARBOXYMETHYL CELLULOSE
Crospovidone			INSOLUBLE POLYVINYLPYRROLIDONE
Cross Linked Homopolymer of 1-Ethenyl-2-Pyrrolidone			INSOLUBLE POLYVINYLPYRROLIDONE
Cross Linked Polyvidone			INSOLUBLE POLYVINYLPYRROLIDONE
Cyclomaltooctanose			GAMMA-CYCLODEXTRIN
Cyclooctaamylose			GAMMA-CYCLODEXTRIN
Cylcodextrin C			CYCLODEXTRIN, BETA-
D,L-Lactic Acid Magnesium Salt			MAGNESIUM LACTATE, (DL-)
D,L-Monocalcium Malate			CALCIUM MALATE
Danish Agar (From Furcellaria fastigiata)			CARRAGEENAN
D-Araboascorbic Acid			ERYTHORBIC ACID
Delta-Gluconolactone			GLUCONO DELTA LACTONE
D-Glucitol			SORBITOL (INCLUDING SORBITOL SYRUP)
D-Glucitol Syrup			SORBITOL (INCLUDING SORBITOL SYRUP)
D-Gluconic Acid Delta-Lactone			GLUCONO DELTA LACTONE
D-Gluconic Acid Monopotassium Salt			POTASSIUM GLUCONATE
Diastase			ALPHA-AMYLASE (*A.oryzae*, var.),

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Dimethyl Pyrocarbonate			DIMETHYL DICARBONATE
Dimethylpolysiloxane			POLYDIMETHYLSILOXANE
Dimethylsilcone Fluid			POLYDIMETHYLSILOXANE
Dimethylsilcone Oil			POLYDIMETHYLSILOXANE
Dinitrogen Monoxide			NITROUS OXIDE
Dipotassium Guanosine-5'-Monophosphate			DIPOTASSIUM GUANYLATE, 5'-
Disodium Dihydrogen (Ethylene-Dinitrilo) - Tetraacetate			Disodium ethylene Diamine Tetraacetate
Disodium Dihydrogen ethylenediaminetetraacetate			Disodium ethylene Diamine Tetraacetate
Disodium Edetate			Disodium ethylene Diamine Tetraacetate
Disodium EDTA			Disodium ethylene Diamine Tetraacetate
Disodium Inosine-5'-Monophosphate			DISODIUM INOSINATE, 5'-
D-Maltitol			MALTITOL AND MALTITOL SYRUP
D-Mannitol			MANNITOL
D-Mannitol and Hydrogenated Saccharides			SORBITOL (INCLUDING SORBITOL SYRUP)
DMDC			DIMETHYL DICARBONATE
Dried Maltitol Syrup			MALTITOL AND MALTITOL SYRUP
Dry Ice (Solid Form)			CARBON DIOXIDE
D-Sorbitol			SORBITOL (INCLUDING SORBITOL SYRUP)
EDTAs		Group ADI g2.5 mg/kg bw	EDTAs
Ester Gum			GLYCEROL ESTER OF WOOD ROSIN
Esters of Glycerol and Thermally Oxidized Soy Bean Fatty Acids			THERMALLY OXIDIZED SOYA BEAN OIL WITH MONO- AND DI-GLYCERIDES OF FATTY ACIDS (TOSOM)
Ethyl Citrate			TRIETHYL CITRATE
Eucheuman (From Eucheuma Spp.)			CARRAGEENAN
FERROCYANIDES		Group ADI 0.025 mg/kg bw	FERROCYANIDES
FORMATES		Group ADI 3 mg/kg bw	FORMATES
Furcellaran (From *Furcellaria fastigiata*)			CARRAGEENAN
gamma-CD			GAMMA-CYCLODEXTRIN
GDL			GLUCONO DELTA LACTONE
Gelose			AGAR
Gluconic Acid Sodium Salt			SODIUM GLUCONATE
Gluconolactone			GLUCONO DELTA LACTONE
Glucose Aerodehydrogenase			GLUCOSE OXIDASE (*Aspergillus niger* var.)
Glucose Oxhydrase			GLUCOSE OXIDASE (*Aspergillus niger* var.)
Glutamic Acid			GLUTAMIC ACID (L(+)-)
Glycerin			GLYCEROL
Glyceryl Monooleate			MONO- AND DIGLYCERIDES
Glyceryl Monoplamitate			MONO- AND DIGLYCERIDES
Glyceryl Monostearate			MONO- AND DIGLYCERIDES
Glyceryl Triacetate			TRIACETIN
Glycogenase			ALPHA-AMYLASE (*A. oryzae*, var.), or Alpha-Amylase (*B. megaterium* expressed in *Bacillus subtilis*)
GMS			MONO- AND DIGLYCERIDES
Guaiac Gum			GUAIAC RESIN
Guaiacum			GUAIAC RESIN
Guanosine-5'-Monophosphoric Acid			GUANYLIC ACID, 5'
Guanylic Acid			GUANYLIC ACID, 5'

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Guar Flour			GUAR GUM
Gum Cyamopsis			GUAR GUM
Gum Guaiac			GUAIAC RESIN
Gum Karaya			KARAYA GUM
Gum Sterculia			KARAYA GUM
Hexacyanoferrate of Calcium			Calcium Ferrocyanide
Hexacyanoferrate of Potassium			Potassium Ferrocyanide
Hexacyanoferrate of Sodium			Sodium Ferrocyanide
Hexamine			HEXAMETHYLENE TETRAMINE
Hydrated Basic Magnesium Carbonate			MAGNESIUM HYDROGEN CARBONATE
Hydrocarbon Waxes			MICROCRYSTALLINE WAX
Hydrogen Chloride			HYDROCHLORIC ACID
Hydrogenated Glucose Syrup			MALTITOL AND MALTITOL SYRUP
Hydrogenated High Maltose-Content Glucose Syrup			MALTITOL AND MALTITOL SYRUP
Hydrogenated Isomaltulose			ISOMALT
Hydrogenated Maltose			MALTITOL AND MALTITOL SYRUP
Hypnean (From Hypnea Spp.)			CARRAGEENAN
Inosinic Acid			INOSINIC ACID, 5'-
Insoluble Cross Linked Homopolymer of n-Vinyl-1-Pyrrolidone			INSOLUBLE POLYVINYLPYRROLIDONE
Insoluble PVP			INSOLUBLE POLYVINYLPYRROLIDONE
Iridophycan (From Iridaea Spp.)			CARRAGEENAN
Irish Moss Gelose			CARRAGEENAN
Iron (II) Lactate			FERROUS LACTATE
Iron Ammonium Citrate			FERRIC AMMONIUM CITRATE
Iron Gluconate			FERROUS GLUCONATE
Isinglass (Bengal, Ceylon, Chinese, or Japanese)			AGAR
Isoascorbic Acid			ERYTHORBIC ACID
Isomaltitol			ISOMALT
Japan Agar			AGAR
Kadaya			KARAYA GUM
Kaolin, Light or Heavy			ALUMININUM SILICATE
Karaya			KARAYA GUM
Katilo			KARAYA GUM
Konjac			KONJAC FLOUR
Konjac Mannen			KONJAC FLOUR
Konnyaleu			KONJAC FLOUR
Kullo			KARAYA GUM
Kutterra			KARAYA GUM
Lactic Acid Esters of Mono- and Diglycerides			LACTIC AND FATTY ACID ESTERS OF GLYCEROL
Lactit			LACTITOL
Lactobiosit			LACTITOL
Lactoglycerides			LACTIC AND FATTY ACID ESTERS OF GLYCEROL
Lactositol			LACTITOL
Layor Carang			AGAR
Lime			CALCIUM OXIDE
Lipase			LIPASE (Animal Sources) LIPASE (*Aspergillus oryzae*, var.)
Locust Bean Gum			CAROB BEAN GUM
Lye			SODIUM HYDROXIDE
Lysozyme			LYSOZYME HYDROCHLORIDE
Macrogol			POLYETHYLENE GLYCOL

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Magnesium Carbonate Hydroxide			MAGNESIUM HYDROGEN CARBONATE
Magnesium Chloride Hexahydrate			MAGNESIUM CHLORIDE
Magnesium Chlorophyll			CHLOROPHYLLS
Magnesium DL-D,L-Lactate			MAGNESIUM LACTATE, (DL-)
Magnesium Gluconate Dihydrate			MAGNESIUM GLUCONATE
Magnesium Glutamate			MAGNESIUM GLUTAMATE, DL-L-
Magnesium Hydroxide Carbonate			MAGNESIUM HYDROGEN CARBONATE
Magnesium Phaeophytin			CHLOROPHYLLS
Magnesium Subcarbonate (Light or Heavy)			MAGNESIUM HYDROGEN CARBONATE
Malic Acid Monosodium Salt			SODIUM HYDROGEN MALATE
Malic Acid Potassium Salt			POTASSIUM MALATE
Malic Acid Sodium Salt			SODIUM MALATE
Maltitol Syrup Powder			MALTITOL AND MALTITOL SYRUP
Mannite			MANNITOL
Methanoic Acid			Formic Acid
Methenamine			HEXAMETHYLENE TETRAMINE
Methyl Ether of Cellulose			METHYL CELLULOSE
Methyl Ethyl Ether of Cellulose			METHYL ETHYL CELLULOSE
Modified Polydextroses			POLYDEXTROSES A AND N
Monocalcium Benzoate			Calcium Benzoate
Monocalcium Malate, D, L-			CALCIUM MALATE
Monoolein			MONO- AND DIGLYCERIDES
Monopalmitin			MONO- AND DIGLYCERIDES
Monopotassium Citrate			POTASSIUM DIHYDROGEN CITRATE
Monosodium Citrate			SODIUM DIHYDROGEN CITRATE
Monostearin			MONO- AND DIGLYCERIDES
MPG			MONOSODIUM GLUTAMATE, L
MSG			MONOSODIUM GLUTAMATE, L
Muriatic Acid			Hydrochloric Acid
Na CMC			SODIUM CARBOXYMETHYL CELLULOSE
Natamycin			PIMARICIN
Nitrogen Oxide			NITROUS OXIDE
Non-Crystallizing Sorbitol Solution			SORBITOL (INCLUDING SORBITOL SYRUP)
Notatin			GLUCOSE OXIDASE (*Aspergillus niger*, var.)
ORTHO-PHENYLPHENOLS		Group ADI 0.2 mg/kg bw	ORTHO-PHENYLPHENOLS
PEG			POLYETHYLENE GLYCOL
Peruvian Tara			TARA GUM
Petroleum Wax			MICROCRYSTALLINE WAX
Phosphatides			LECITHIN
Phospholipids			LECITHIN
Plain Caramel			CARAMEL COLOUR, CLASS I
PNG-Carragenan			PROCESSED EUCHEUMA SEAWEED
Poly(Dimethylsiloxane)			POLYDIMETHYLSILOXANE
Polydextrose			POLYDEXTROSES A AND N
Polyvinylpolypyrrolidone			INSOLUBLE POLYVINYLPYRROLIDONE
Pomalous Acid			MALIC ACID (DL-)
Potassium 5'-Guanylate			DIPOTASSIUM GUANYLATE, 5'-
Potassium 5'-Inosinate			DIPOTASSIUM INOSINATE, 5'-
Potassium Bicarbonate			POTASSIUM HYDROGEN CARBONATE
Potassium Citrate			TRIPOTASSIUM CITRATE

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Potassium Citrate Monobasic			POTASSIUM DIHYDROGEN CITRATE
Potassium D-Gluconate			POTASSIUM GLUCONATE
Potassium Glutamate			MONOSODIUM GLUTAMATE, L
Potassium Guanylate			DIPOTASSIUM GUANYLATE, 5'-
Potassium Hydrate			POTASSIUM HYDROXIDE
Potassium Inosinate			DIPOTASSIUM INOSINATE, 5'-
Potassium Myristate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Potassium Oleate			SALTS OF OLEIC ACID (Ca
Potassium Palmitate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Potassium Stearate			SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
Povidone			POLYVINYLPYRROLIDONE
Propyl Gallate			Gallate, Propyl
Ptyalin			ALPHA-AMYLASE (*A.oryzae*, var.), ALPHA-AMYLASE (Carbohydrase) (*Bacillus licheniformis*)
PVP			POLYVINYLPYRROLIDONE
SAIB			SUCROSE ACETATE ISOBUTYRATE
Sal Ammoniac			AMMONIUM CHLORIDE
Salts of Oleic Acid (Calcium, Potassium and Sodium)			SALTS OF OLEIC ACID (Ca, K, Na)
Semi-Refined Carrageenan			PROCESSED EUCHEUMA SEAWEED
Silica			SILICON DIOXIDE (AMORPHOUS)
Simethicone			POLYDIMETHYLSILOXANE
Slaked Lime			CALCIUM HYDROXIDE
Soda Ash			SODIUM CARBONATE
Sodium 5'-Guanylate			DISODIUM GUANYLATE, 5'
Sodium 5'-Inosinate			DISODIUM INOSINATE, 5'
Sodium 5'-Ribonucleotides			DISODIUM RIBONUCLEOTIDES, 5'
Sodium Acid Carbonate			SODIUM HYDROGEN CARBONATE
Sodium Bicarbonate			SODIUM HYDROGEN CARBONATE
Sodium Calcium Silicoaluminate			CALCIUM ALUMINIUM SILICATE (SYNTHETIC)
Sodium Cellulose Glycolate			SODIUM CARBOXYMETHYL CELLULOSE
Sodium Citrate			TRISOIDUM CITRATE
Sodium Citrate Monobasic			SODIUM DIHYDROGEN CITRATE
Sodium CMC			SODIUM CARBOXYMETHYL CELLULOSE
Sodium D-Gluconate			SODIUM GLUCONATE
Sodium Glutamate			MONOSODIUM GLUTAMATE, L
Sodium Guanylate			DISODIUM GUANYLATE, 5'
Sodium Hydrate			SODIUM HYDROXIDE
Sodium Inosinate			DISODIUM INOSINATE, 5'
Sodium Isoascorbate			SODIUM ERYTHORBATE
Sodium Malate, D,L-			SODIUM MALATE
Sodium Monohydrogendicarbonate			SODIUM SESQUICARBONATE
Sodium Myristate			Salts of Myristic, Palmitic & Stearic Acids (NH4, Ca, K, Na)
Sodium Oleate			SALTS OF OLEIC ACID (Ca
Sodium Palmitate			Salts of Myristic, Palmitic & Stearic Acids (NH4, Ca, K, Na)
Sodium Ribonucleotides			DISODIUM RIBONUCLEOTIDES, 5'
Sodium Silicoaluminate			SODIUM ALUMINOSILICATE
Sodium Stearate			Salts of Myristic, Palmitic & Stearic Acids (NH4, Ca, K, Na)

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Sodium Stearoyl Lactate			Sodium Stearoyl Lactylate
Sorbit			SORBITOL (INCLUDING SORBITOL SYRUP)
Starch, Acid-Treated			ACID TREATED STARCH
Starch, Alkaline Treated			Alkaline Treated Starch
Starch, Bleached			BLEACHED STARCH
Starch, Enzyme Treated			ENZYME TREATED STARCH
Starch, Roasted			DEXTRINS, WHITE AND YELLOW, ROASTED STARCH
Sterculia			KARAYA GUM
Strong Ammonia Solution			AMMONIUM HYDROXIDE
Sulphite Ammonia Caramel			CARAMEL COLOUR, CLASS IV
Sylvine			POTASSIUM CHLORIDE
Sylvite			POTASSIUM CHLORIDE
Talcum			TALC
Tartaric Acid Esters of Mono- and Diglycerides			TARTARIC, ACETIC & FATTY ACID ESTERS OF GLYCEROL (MIXED)
Tartrated Mono- and Diglycerides			TARTARIC, ACETIC & FATTY ACID ESTERS OF GLYCEROL (MIXED)
THIODIPROPIONATES		Group ADI 3 mg/kg bw	
Tin Dichloride			STANNOUS CHLORIDE
TOSOM		30 mg/kg bw	THERMALLY OXIDIZED SOYA BEAN OIL WITH MONO- AND DI-GLYCERIDES OF FATTY ACIDS (TOSOM)
Tributyrase			Lipase (Animal Sources), Lipase (Aspergillus oryzae, var.)
Triglycerine Lipase			Lipase (Animal Sources), Lipase (*Aspergillus oryzae*, var.)
Vitamin C			ASCORBIC ACID
Vitamin C Palmitate			Ascorbyl Palmitate
Vitamin C Stearate			Ascorbyl Stearate
Wax-Free Bleached Shellac			SHELLAC
White and Yellow Dextrins			DEXTRINS, WHITE AND YELLOW, ROASTED STARCH
Yellow Prussiate of Lime			Calcium Ferrocyanide
Yellow Prussiate of Potash			Potassium Ferrocyanide
Yellow Prussiate of Soda			Sodium Ferrocyanide
CHLOROPHYLLS	140	Not Limited	CHLOROPHYLLS
FAST GREEN FCF	143	25 mg/kg bw	FAST GREEN FCF
CARAMEL COLOUR, CLASS I	150a	Not Specified	CARAMEL COLOUR, CLASS I
Caramel Colour, Class I - Plain	150a	Not Specified	CARAMEL COLOUR, CLASS I
CARAMEL COLOUR, CLASS III	150c	200 mg/kg bw	CARAMEL COLOUR, CLASS III
Caramel Colour, Class III - Ammonia Process	150c	200 mg/kg bw	CARAMEL COLOUR, CLASS III
CARAMEL COLOUR, CLASS IV	150d	200 mg/kg bw	CARAMEL COLOUR, CLASS IV
Caramel Colour, Class IV - Ammonia Sulphite Process	150d	200 mg/kg bw	CARAMEL COLOUR, CLASS IV
BEET RED	162	Not Specified	BEET RED
CALCIUM CARBONATE	170i	Not Specified	CALCIUM CARBONATE
TITANIUM DIOXIDE	171	Not Limited	TITANIUM DIOXIDE
Benzoic Acid	210		BENZOATES
Sodium Benzoate	211		BENZOATES
Potassium Benzoate	212		BENZOATES
Calcium Benzoate	213		BENZOATES
Ortho-Phenylphenol	231		ORTHO-PHENYLPHENOLS
Sodium o-Phenylphenol	232		ORTHO-PHENYLPHENOLS
PIMARICIN	235	0.3 mg/kg bw	PIMARICIN

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
Formic Acid	236		FORMATES
HEXAMETHYLENE TETRAMINE	239	0.15 mg/kg bw	HEXAMETHYLENE TETRAMINE
DIMETHYL DICARBONATE	242	Acceptable	DIMETHYL DICARBONATE
ACETIC ACID, GLACIAL	260	Not Limited	ACETIC ACID, GLACIAL
POTASSIUM ACETATE	261	Not Specified	POTASSIUM ACETATE
SODIUM ACETATE	262i	Not Specified	SODIUM ACETATE
CALCIUM ACETATE	263	Not Limited	CALCIUM ACETATE
AMMONIUM ACETATE	264	Not Specified	AMMONIUM ACETATE
LACTIC ACID (L-, D- and DL-)	270	Not Limited	LACTIC ACID (L-, D- and DL-)
PROPIONIC ACID	280	Not Limited	PROPIONIC ACID
SODIUM PROPIONATE	281	Not Limited	SODIUM PROPIONATE
CALCIUM PROPIONATE	282	Not Limited	CALCIUM PROPIONATE
POTASSIUM PROPIONATE	283	Not Limited	POTASSIUM PROPIONATE
CARBON DIOXIDE	290	Not Specified	CARBON DIOXIDE
MALIC ACID (DL-)	296	Not Specified	MALIC ACID (DL-)
FUMARIC ACID	297	Not Specified	FUMARIC ACID
ASCORBIC ACID	300	Not Specified	ASCORBIC ACID
SODIUM ASCORBATE	301	Not Specified	SODIUM ASCORBATE
CALCIUM ASCORBATE	302	Not Specified	CALCIUM ASCORBATE
POTASSIUM ASCORBATE	303	Not Specified	POTASSIUM ASCORBATE
Ascorbyl Palmitate	304		ASCORBYL ESTERS
Ascorbyl Stearate	305		ASCORBYL ESTERS
GALLATE, PROPYL	310	1.4 mg/kg bw	GALLATE, PROPYL
GUAIAC RESIN	314	2.5 mg/kg bw	GUAIAC RESIN
ERYTHORBIC ACID	315	Not Specified	ERYTHORBIC ACID
SODIUM ERYTHORBATE	316	Not Specified	SODIUM ERYTHORBATE
LECITHIN	322	Not Limited	LECITHIN
SODIUM LACTATE	325	Not Limited	SODIUM LACTATE
POTASSIUM LACTATE (SOLUTION)	326	Not Limited	POTASSIUM LACTATE (SOLUTION)
CALCIUM LACTATE	327	Not Limited	CALCIUM LACTATE
AMMONIUM LACTATE	328	Not Limited	AMMONIUM LACTATE
MAGNESIUM LACTATE, (DL-)	329	Not Limited	MAGNESIUM LACTATE, (DL-)
CITRIC ACID	330	Not Limited	CITRIC ACID
SODIUM DIHYDROGEN CITRATE	331i	Not Limited	SODIUM DIHYDROGEN CITRATE
TRISOIDUM CITRATE	331iii	Not Specified	TRISOIDUM CITRATE
POTASSIUM DIHYDROGEN CITRATE	332i	Not Limited	POTASSIUM DIHYDROGEN CITRATE
TRIPOTASSIUM CITRATE	332ii	Not Specified	TRIPOTASSIUM CITRATE
CALCIUM CITRATE	333	Not Specified	CALCIUM CITRATE
SODIUM HYDROGEN MALATE	350i	Not Specified	SODIUM HYDROGEN MALATE
SODIUM MALATE	350ii	Not Specified	SODIUM MALATE
POTASSIUM HYDROGEN MALATE	351i	Not Specified	POTASSIUM HYDROGEN MALATE
POTASSIUM MALATE	351ii	Not Specified	POTASSIUM MALATE
CALCIUM MALATE	352ii	Not Specified	CALCIUM MALATE
SODIUM FUMARATE	365	Not Specified	SODIUM FUMARATE
AMMONIUM CITRATE	380	Not Limited	AMMONIUM CITRATE
TRIAMMONIUM CITRATE	380	Not Limited	TRIAMMONIUM CITRATE
FERRIC AMMONIUM CITRATE	381	0.8 mg/kg bw	FERRIC AMMONIUM CITRATE
ISOPROPYL CITRATES	384	14 mg/kg bw	ISOPROPYL CITRATES
CALCIUM DISODIUM ETHYLENE DIAMINE TETRA ACETATE	385	Group ADI	CALCIUM DISODIUM ETHYLENE DIAMINE TETRA ACETATE
Calcium Disodium Ethylene Diamine Tetraacetate	385		EDTAS
DISODIUM ETHYLENE DIAMINE TETRA ACETATE	386		EDTAs
Disodium Ethylene Diamine Tetraacetate	386		EDTAs
OXYSTEARIN	387	25 mg/kg bw	OXYSTEARIN
Thiodipropionic Acid	388	Group ADI	THIODIPROPIONATES
Dilauryl Thiodipropionate	389	Group ADI	THIODIPROPIONATES

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
ALGINIC ACID	400	Not Specified	ALGINIC ACID
SODIUM ALGINATE	401	Not Specified	SODIUM ALGINATE
POTASSIUM ALGINATE	402	Not Specified	POTASSIUM ALGINATE
AMONNIUM ALGINATE	403	Not Specified	AMONNIUM ALGINATE
CALCIUM ALGINATE	404	Not Specified	CALCIUM ALGINATE
AGAR	406	Not Limited	AGAR
CARRAGEENAN	407	Not Specified	CARRAGEENAN
PROCESSED EUCHEUMA SEAWEED	407a	Not Specified	PROCESSED EUCHEUMA SEAWEED
CAROB BEAN GUM	410	Not Specified	CAROB BEAN GUM
GUAR GUM	412	Not Specified	GUAR GUM
TRAGACANTH GUM	413	Not Specified	TRAGACANTH GUM
GUM ARABIC	414	Not Specified	GUM ARABIC
XANTHAN GUM	415	Not Specified	XANTHAN GUM
KARAYA GUM	416	Not Specified	KARAYA GUM
TARA GUM	417	Not Specified	TARA GUM
GELLAN GUM	418	Not Specified	GELLAN GUM
SORBITOL (INCLUDING SORBITOL SYRUP)	420	Not Specified	SORBITOL (INCLUDING SORBITOL SYRUP)
MANNITOL	421	Not Specified	MANNITOL
GLYCEROL	422	Not Specified	GLYCEROL
CURDLAN	424	Not Specified	CURDLAN
KONJAC FLOUR	425	Not Specified	KONJAC FLOUR
Pectin (Non-Amidated)	440		PECTINS (AMIDATED AND NON-AMIDATED)
PECTINS (AMIDATED AND NON-AMIDATED)	440	Not Specified	PECTINS (AMIDATED AND NON-AMIDATED)
SUCROSE ACETATE ISOBUTYRATE	444	20 mg/kg bw	SUCROSE ACETATE ISOBUTYRATE
GLYCEROL ESTER OF WOOD ROSIN	445	25 mg/kg bw	GLYCEROL ESTER OF WOOD ROSIN
GAMMA-CYCLODEXTRIN	458	Not Specified	GAMMA-CYCLODEXTRIN
CYCLODEXTRIN, BETA-	459	5 mg/kg bw	CYCLODEXTRIN, BETA-
MICROCRYSTALLINE CELLULOSE	460i	Not Specified	MICROCRYSTALLINE CELLULOSE
POWDERED CELLULOSE	460ii	Not Specified	POWDERED CELLULOSE
METHYL CELLULOSE	461	Not Specified	METHYL CELLULOSE
ETHYL CELLULOSE	462	Not Specified	ETHYL CELLULOSE
HYDROXYPROPYL CELLULOSE	463	Not Specified	HYDROXYPROPYL CELLULOSE
HYDROXYPROPYL METHYL CELLULOSE	464	Not Specified	HYDROXYPROPYL METHYL CELLULOSE
METHYL ETHYL CELLULOSE	465	Not Specified	METHYL ETHYL CELLULOSE
SODIUM CARBOXYMETHYL CELLULOSE	466	Not Specified	SODIUM CARBOXYMETHYL CELLULOSE
ETHYL HYDROXYETHYL CELLULOSE	467	Not Specified	ETHYL HYDROXYETHYL CELLULOSE
SODIUM CARBOXYMETHYL CELLULOSE, ENZYMATICALLY HYDROLYZED	469	Not Specified	SODIUM CARBOXYMETHYL CELLULOSE, ENZYMATICALLY HYDROLYZED
SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)	470	Not Specified	SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)
SALTS OF OLEIC ACID (Ca, K, Na)	470		SALTS OF OLEIC ACID (Ca, K, Na)
MONO- AND DIGLYCERIDES	471	Not Limited	MONO- AND DIGLYCERIDES
ACETIC AND FATTY ACID ESTERS OF GLYCEROL	472a	Not Limited	ACETIC AND FATTY ACID ESTERS OF GLYCEROL
CITRIC AND FATTY ACID ESTERS OF GLYCEROL	472c	Not Limited	CITRIC AND FATTY ACID ESTERS OF GLYCEROL
LACTIC AND FATTY ACID ESTERS OF GLYCEROL	472b	Not Limited	LACTIC AND FATTY ACID ESTERS OF GLYCEROL
TARTARIC, ACETIC & FATTY ACID ESTERS OF GLYCEROL (MIXED)	472f	Not Limited	TARTARIC, ACETIC & FATTY ACID ESTERS OF GLYCEROL (MIXED)
PROPYLENE GLYCOL ESTERS OF FATTY ACIDS	477	25 mg/kg bw	PROPYLENE GLYCOL ESTERS OF FATTY ACIDS

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
THERMALLY OXIDIZED SOYA BEAN OIL WITH MONO- AND DI-GLYCERIDES OF FATTY ACIDS (TOSOM)	479	30 mg/kg bw	THERMALLY OXIDIZED SOYA BEAN OIL WITH MONO- AND DI-GLYCERIDES OF FATTY ACIDS (TOSOM)
SODIUM CARBONATE	500i	Not Limited	SODIUM CARBONATE
SODIUM HYDROGEN CARBONATE	500ii	Not Specified	SODIUM HYDROGEN CARBONATE
SODIUM SESQUICARBONATE	500iii	Not Specified	SODIUM SESQUICARBONATE
POTASSIUM CARBONATE	501i	Not Specified	POTASSIUM CARBONATE
POTASSIUM HYDROGEN CARBONATE	501ii	Not Specified	POTASSIUM HYDROGEN CARBONATE
AMMONIUM CARBONATE	503i	Not Specified	AMMONIUM CARBONATE
AMMONIUM HYDROGEN CARBONATE	503ii	Not Specified	AMMONIUM HYDROGEN CARBONATE
MAGNESIUM CARBONATE	504i	Not Specified	MAGNESIUM CARBONATE
MAGNESIUM HYDROGEN CARBONATE	504ii	Not Specified	MAGNESIUM HYDROGEN CARBONATE
HYDROCHLORIC ACID	507	Not Limited	HYDROCHLORIC ACID
POTASSIUM CHLORIDE	508	Not Specified	POTASSIUM CHLORIDE
CALCIUM CHLORIDE	509	Not Specified	CALCIUM CHLORIDE
AMMONIUM CHLORIDE	510	Not Specified	AMMONIUM CHLORIDE
MAGNESIUM CHLORIDE	511	Not Specified	MAGNESIUM CHLORIDE
STANNOUS CHLORIDE	512	2 mg/kg bw	STANNOUS CHLORIDE
SODIUM SULFATE	514	Not Specified	SODIUM SULFATE
POTASSIUM SULFATE	515	Not Specified	POTASSIUM SULFATE
CALCIUM SULFATE	516	Not Specified	CALCIUM SULFATE
ALUMINIUM AMMONIUM SULFATE	523	7 mg/kg bw (PTWI)	ALUMINIUM AMMONIUM SULFATE
SODIUM HYDROXIDE	524	Not Limited	SODIUM HYDROXIDE
POTASSIUM HYDROXIDE	525	Not Limited	POTASSIUM HYDROXIDE
CALCIUM HYDROXIDE	526	Not Limited	CALCIUM HYDROXIDE
AMMONIUM HYDROXIDE	527	Not Limited	AMMONIUM HYDROXIDE
MAGNESIUM HYDROXIDE	528	Not Specified	MAGNESIUM HYDROXIDE
CALCIUM OXIDE	529	Not Limited	CALCIUM OXIDE
MAGNESIUM OXIDE	530	Not Limited	MAGNESIUM OXIDE
Sodium Ferrocyanide	535	Group ADI	FERROCYANIDES
Potassium Ferrocyanide	536		FERROCYANIDES
Calcium Ferrocyanide	538		FERROCYANIDES
SILICON DIOXIDE (AMORPHOUS)	551	Not Specified	SILICON DIOXIDE (AMORPHOUS)
CALCIUM SILICATE	552	Not Specified	CALCIUM SILICATE
MAGNESIUM SILICATE (SYNTHETIC)	553i	Not Specified	MAGNESIUM SILICATE (SYNTHETIC)
TALC	553iii	Not Specified	TALC
SODIUM ALUMINOSILICATE	554	Not Specified	SODIUM ALUMINOSILICATE
CALCIUM ALUMINIUM SILICATE (SYNTHETIC)	556	Not Specified	CALCIUM ALUMINIUM SILICATE (SYNTHETIC)
ALUMININUM SILICATE	559	Not Specified	ALUMININUM SILICATE
GLUCONO DELTA LACTONE	575	Not Specified	GLUCONO DELTA LACTONE
SODIUM GLUCONATE	576	Not Specified	SODIUM GLUCONATE
POTASSIUM GLUCONATE	577	Not Specified	POTASSIUM GLUCONATE
CALCIUM GLUCONATE	578	Not Specified	CALCIUM GLUCONATE
FERROUS GLUCONATE	579	0.8 mg/kg bw	FERROUS GLUCONATE
MAGNESIUM GLUCONATE	580	Not Specified	MAGNESIUM GLUCONATE
FERROUS LACTATE	585	0.9 mg/kg bw	FERROUS LACTATE
GLUTAMIC ACID (L(+)-)	620	Not Specified	GLUTAMIC ACID (L(+)-)
MONOSODIUM GLUTAMATE, L-	621	Not Specified	MONOSODIUM GLUTAMATE, L-
MONOPOTASSIUM GLUTAMATE, L-	622	Not Specified	MONOPOTASSIUM GLUTAMATE, L-
CALCIUM GLUTAMATE, DL-L-	623	Not Specified	CALCIUM GLUTAMATE, DL-L-
MONOAMMONIUM GLUTAMATE, L-	624	Not Specified	MONOAMMONIUM GLUTAMATE, L-
MAGNESIUM GLUTAMATE, DL-L-	625	Not Specified	MAGNESIUM GLUTAMATE, DL-L-
GUANYLIC ACID, 5'-	626	Not Specified	GUANYLIC ACID, 5'-
DISODIUM GUANYLATE, 5'-	627	Not Specified	DISODIUM GUANYLATE, 5'-
DIPOTASSIUM GUANYLATE, 5'-	628	Not Specified	DIPOTASSIUM GUANYLATE, 5'-
CALCIUM GUANYLATE, 5'-	629	Not Specified	CALCIUM GUANYLATE, 5'-
INOSINIC ACID, 5'-	630	Not Specified	INOSINIC ACID, 5'-

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
DISODIUM INOSINATE, 5'-	631	Not Specified	DISODIUM INOSINATE, 5'-
DIPOTASSIUM INOSINATE, 5'-	632	Not Specified	DIPOTASSIUM INOSINATE, 5'-
CALCIUM INOSINATE, 5'-	633	Not Specified	CALCIUM INOSINATE, 5'-
CALCIUM RIBONUCLEOTIDES, 5'-	634	Not Specified	CALCIUM RIBONUCLEOTIDES, 5'-
DISODIUM RIBONUCLEOTIDES, 5'-	635	Not Specified	DISODIUM RIBONUCLEOTIDES, 5'-
POLYDIMETHYLSILOXANE	900a	1.5 mg/kg bw	POLYDIMETHYLSILOXANE
BEESWAX, WHITE AND YELLOW	901	Acceptable	BEESWAX, WHITE AND YELLOW
CANDELILLA WAX	902	Acceptable	CANDELILLA WAX
CARNAUBA WAX	903	7 mg/kg bw	CARNAUBA WAX
SHELLAC	904	Acceptable	SHELLAC
MICROCRYSTALLINE WAX	905ci	20 mg/kg bw	MICROCRYSTALLINE WAX
CHLORINE	925	2.5 mg/kg flour	CHLORINE
CHLORINE DIOXIDE	926	30 mg/kg flour (acceptable treatment level)	CHLORINE DIOXIDE
AZODICARBONAMIDE	927a	45 mg/kg flour	AZODICARBONAMIDE
NITROGEN	941	No ADI necessary	NITROGEN
NITROUS OXIDE	942	Acceptable	NITROUS OXIDE
PROPANE	944	Not Specified	PROPANE
ISOMALT	953	Not Specified	ISOMALT
THAUMATIN	957	Not Specified	THAUMATIN
POLYGLYCITOL SYRUP	964	Not Specified	POLYGLYCITOL SYRUP
MALTITOL AND MALTITOL SYRUP	965	Not Specified	MALTITOL AND MALTITOL SYRUP
LACTITOL	966	Not Specified	LACTITOL
XYLITOL	967	Not Specified	XYLITOL
ERYTHRITOL	968	Not Specified	ERYTHRITOL
Choline Acetate	1001i	Not Limited	CHOLINE SALTS
Choline Carbonate	1001ii	Not Limited	CHOLINE SALTS
Choline Chloride	1001iii	Not Limited	CHOLINE SALTS
Choline Citrate	1001iv	Not Limited	CHOLINE SALTS
Choline Lactate	1001vi	Not Limited	CHOLINE SALTS
CHOLINE SALTS	1001	Not Limited	CHOLINE SALTS
Choline Tartrate	1001v	Not Limited	CHOLINE SALTS
ALPHA-AMYLASE (*Aspergillus oryzae* var.)	1100	Acceptable	ALPHA-AMYLASE (*A. oryzae* var.)
ALPHA-AMYLASE (*Bacillus megaterium* expressed in *Bacillus subtilis*)	1100	Not Specified	ALPHA-AMYLASE (*Bacillus megaterium* expressed in *Bacillus subtilis*)
ALPHA-AMYLASE (*Bacillus stearothermophilus* expressed in *Bacillus subtilis*)	1100	Not Specified	ALPHA-AMYLASE (*Bacillus stearothermophilus* expressed in *Bacillus subtilis*)
ALPHA-AMYLASE (*Bacillus stearothermophilus*)	1100	Not Specified	ALPHA-AMYLASE (*Bacillus stearothermophilus*)
ALPHA-AMYLASE (*Bacillus subtilis*)	1100	Not Specified	ALPHA-AMYLASE (*Bacillus subtilis*)
ALPHA-AMYLASE (Carbohydrase) (*Bacillus licheniformis*)	1100	Not Specified	ALPHA-AMYLASE (Carbohydrase) (*Bacillus licheniformis*)
BROMELAIN	1101iii	Not Limited	BROMELAIN
PAPAIN	1101ii	Not Limited	PAPAIN
PROTEASE (*Asperigillus oryzae* var.)	1101i	Acceptable	PROTEASE (*Asperigillus oryzae* var.)
GLUCOSE OXIDASE (*Aspergillus niger* var.)	1102	Not Specified	GLUCOSE OXIDASE (*Aspergillus niger* var.)
LIPASE (Animal Sources)	1104	Not Limited	LIPASE (Animal Sources)
LIPASE (*Aspergillus oryzae*, var.)	1104	Not Specified	LIPASE (*Aspergillus oryzae*, var.)
LYSOZYME HYDROCHLORIDE	1105	Acceptable	LYSOZYME HYDROCHLORIDE
POLYDEXTROSES A AND N	1200	Not Specified	POLYDEXTROSES A AND N
POLYVINYLPYRROLIDONE	1201	50 mg/kg bw	POLYVINYLPYRROLIDONE
INSOLUBLE POLYVINYLPYRROLIDONE	1202	Not Specified	INSOLUBLE POLYVINYLPYRROLIDONE
DEXTRINS, WHITE AND YELLOW, ROASTED STARCH	1400	Not Specified	DEXTRINS, WHITE AND YELLOW, ROASTED STARCH
ACID TREATED STARCH	1401	Not Specified	ACID TREATED STARCH
ALKALINE TREATED STARCH	1402	Not Specified	ALKALINE TREATED STARCH

Additive	INS	JECFA ADI	MAIN TERM/Synonyms
BLEACHED STARCH	1403	Not Specified	BLEACHED STARCH
OXIDIZED STARCH	1404	Not Specified	OXIDIZED STARCH
ENZYME TREATED STARCH	1405	Not Specified	ENZYME TREATED STARCH
MONOSTARCH PHOSPHATE	1410	Not Specified	MONOSTARCH PHOSPHATE
DISTARCH PHOSPHATE	1412	Not Specified	DISTARCH PHOSPHATE
ACETYLATED DISTARCH PHOSPHATE	1414	Not Specified	ACETYLATED DISTARCH PHOSPHATE
STARCH ACETATE	1420		STARCH ACETATE
ACETYLATED DISTARCH ADIPATE	1422	Not Specified	ACETYLATED DISTARCH ADIPATE
HYDROXYPROPYL STARCH	1440	Not Specified	HYDROXYPROPYL STARCH
HYDROXYPROPYL DISTARCH PHOSPHATE	1442	Not Specified	HYDROXYPROPYL DISTARCH PHOSPHATE
STARCH SODIUM OCTENYL SUCCINATE	1450	Not Specified	STARCH SODIUM OCTENYL SUCCINATE
TRIETHYL CITRATE	1505	20 mg/kg bw	TRIETHYL CITRATE
TRIACETIN	1518	Not Specified	TRIACETIN
POLYETHYLENE GLYCOL	1521	10 mg/kg bw	POLYETHYLENE GLYCOL

CODEX GENERAL STANDARD FOR FOOD ADDITIVES

LIST B

JECFA-REVIEWED FOOD ADDITIVES WITH

ADIS AND INS NUMBERS

(DOES NOT INCLUDE SYNONYMS)

INS	Additive	JECFA ADI	JECFA Review Date (year-mtg)
Group ADI	ASCORBYL ESTERS	1.25 mg/kg bw	1973-17
Group ADI	BENZOATES	5 mg/kg bw	1996-46
Group ADI	EDTAs	2.5 mg/kg bw	1973-17
Group ADI	FERROCYANIDES	0.025 mg/kg bw	1974-18
Group ADI	FORMATES	3 mg/kg bw	1973-17
Group ADI	ORTHO-PHENYLPHENOLS	0.2 mg/kg bw	1964-08
Group ADI	THIODIPROPIONATES	3 mg/kg bw	1973-17
260	Acetic Acid, Glacial	Not Limited	1973-17
472a	Acetic and Fatty Acid Esters of Glycerol	Not Limited	1973-17
1422	Acetylated Distarch Adipate	Not Specified	1982-26
1414	Acetylated Distarch Phosphate	Not Specified	1982-26
1401	Acid Treated Starch	Not Specified	1982-26
406	Agar	Not Limited	1973-17
400	Alginic Acid	Not Specified	1992-39
1402	Alkaline Treated Starch	Not Specified	1982-26
1100	Alpha-Amylase (*Aspergillus oryzae* var.)	Acceptable	1987-31
1100	Alpha-Amylase (*Bacillus megaterium* expressed in *Bacillus subtilis*)	Not Specified	1987-31
1100	Alpha-Amylase (*Bacillus stearothermophilus* expressed in *Bacillus subtilis*)	Not Specified	1990-37
1100	Alpha-Amylase (*Bacillus stearothermophilus*)	Not Specified	1990-37
1100	Alpha-Amylase (*Bacillus subtilis*)	Not Specified	1990-37
1100	Alpha-Amylase (Carbohydrase) (*Bacillus licheniformis*)	Not Specified	1985-29
523	Aluminium Ammonium Sulphate	7 mg/kg bw (PTWI)	1988-33
559	Aluminium Silicate	Not Specified	1985-29
264	Ammonium Acetate	Not Specified	1982-26
403	Ammonium Alginate	Not Specified	1992-39
503i	Ammonium Carbonate	Not Specified	1982-26
510	Ammonium Chloride	Not Specified	1979-23
380	Ammonium Citrate	Not Limited	1979-23
503ii	Ammonium Hydrogen Carbonate	Not Specified	1982-26
527	Ammonium Hydroxide	Not Limited	1965-09
328	Ammonium Lactate	Not Limited	1973-17
300	Ascorbic Acid	Not Specified	1981-25
304	Ascorbyl Palmitate	See ASCORBYL ESTERS	1973-17
305	Ascorbyl Stearate	ASCORBYL ESTERS	1973-17
927a	Azodicarbonamide	45 mg/kg flour	1965-09
901	Beeswax, White and Yellow	Acceptable	1992-39
162	Beet Red	Not Specified	1987-31
210	Benzoic Acid	See BENZOATES	1996-46
1403	Bleached Starch	Not Specified	1982-26
1101iii	Bromelain	Not Limited	1971-15
263	Calcium Acetate	Not Limited	1973-17
404	Calcium Alginate	Not Specified	1992-39
556	Calcium Aluminium Silicate (Synthetic)	Not Specified	1985-29
302	Calcium Ascorbate	Not Specified	1981-25
213	Calcium Benzoate	See BENZOATES	1996-46
170i	Calcium Carbonate	Not Specified	1965-09
509	Calcium Chloride	Not Specified	1973-17

INS	Additive	JECFA ADI	JECFA Review Date (year-mtg)
333	Calcium Citrate	Not Specified	1973-17
385	Calcium Disodium Ethylene Diamine Tetra Acetate	See EDTAs	1973-17
538	Calcium Ferrocyanide	See FERROCYANDIES	1974-18
578	Calcium Gluconate	Not Specified	1986-30, 1998-51
623	Calcium Glutamate, Dl-L-	Not Specified	1987-31
629	Calcium Guanylate, 5'-	Not Specified	1985-29
526	Calcium Hydroxide	Not Limited	1965-09
633	Calcium Inosinate, 5'-	Not Specified	1985-29
327	Calcium Lactate	Not Limited	1974-18
352ii	Calcium Malate	Not Specified	1979-23
529	Calcium Oxide	Not Limited	1965-09
282	Calcium Propionate	Not Limited	1973-17
634	Calcium Ribonucleotides, 5'-	Not Specified	1974-18
552	Calcium Silicate	Not Specified	1985-29
516	Calcium Sulphate	Not Specified	1973-17
902	Candelilla Wax	Acceptable	1992-39
150a	CARAMEL COLOUR, CLASS I	Not Specified	1985-29
150c	CARAMEL COLOUR, CLASS III	200 mg/kg bw	1985-29-
150d	CARAMEL COLOUR, CLASS IV	200 mg/kg bw	1985-29-
290	Carbon Dioxide	Not Specified	1985-29
903	Carnauba Wax	7 mg/kg bw	1992-39
410	Carob Bean Gum	Not Specified	1981-25
407	Carrageenan	Not Specified	1984-28, 2001-57
925	Chlorine	2.5 mg/kg flour	1985-29
926	Chlorine Dioxide	30 mg/kg flour (acceptable treatment level)	1963-07
140	Chlorophylls	Not Limited	1969-13
1001i	Choline Acetate	See CHOLINE SALTS	1971-15
1001ii	Choline Carbonate	See CHOLINE SALTS	1971-15
1001iii	Choline Chloride	See CHOLINE SALTS	1971-15
1001iv	Choline Citrate	See CHOLINE SALTS	1971-15
1001vi	Choline Lactate	See CHOLINE SALTS	1971-15
1001	CHOLINE SALTS	Not Limited	1971-15
1001v	Choline Tartrate	See CHOLINE SALTS	1971-15
330	Citric Acid	Not Limited	1973-17
472c	Citric and Fatty Acid Esters of Glycerol	Not Limited	1973-17
424	Curdlan	Not Specified	2001-57
459	Cyclodextrin, Beta	5 mg/kg bw	1995-44
1400	Dextrins, White and Yellow Roasted Starch	Not Specified	1982-26
389	Dilauryl Thiodipropionate	See THIODIPROPIONATES	1973-17
242	Dimethyl Dicarbonate	Acceptable	1990-37
628	Dipotassium Guanylate, 5'-	Not Specified	1985-29
632	Dipotassium Inosinate, 5'-	Not Specified	1985-29
386	Disodium Ethylene Diamine Tetra Acetate	See EDTAs	1973-17
627	Disodium Guanylate, 5'-	Not Specified	1993-41
631	Disodium Inosinate, 5'-	Not Specified	1993-41
635	Disodium Ribonucleotides, 5'-	Not Specified	1974-18
1412	Distarch Phosphate	Not Specified	1982-26
1405	Enzyme Treated Starch	Not Specified	1982-26
315	Erythorbic Acid	Not Specified	1990-37
968	Erythritol	Not Specified	1999-53
462	Ethyl Cellulose	Not Specified	1989-35
467	Ethyl Hydroxyethyl Cellulose	Not Specified	1989-35
143	Fast Green FCF	25 mg/kg bw	1986-30
381	Ferric Ammonium Citrate	0.8 mg/kg bw	1985-29
579	Ferrous Gluconate	0.8 mg/kg bw	1987-31
585	Ferrous Lactate	0.9 mg/kg bw	1989-35
236	Formic Acid	See FORMATES	1973-17

INS	Additive	JECFA ADI	JECFA Review Date (year-mtg)
297	Fumaric Acid	Not Specified	1989-35
310	Gallate, Propyl	1.4 mg/kg bw	1996-46
458	gamma-Cyclodextrin		
418	Gellan Gum	Not Specified	1990-37
575	Glucono Delta-Lactone	Not Specified	1986-30, 1998-51
1102	Glucose Oxidase (*Aspergillus niger* var.)	Not Specified	1971-15
620	Glutamic Acid (L(+)-)	Not Specified	1987-31
422	Glycerol	Not Specified	1976-20
445	Glycerol Ester of Wood Rosin	25 mg/kg bw	1996-46
314	Guaiac Resin	2.5 mg/kg bw	1973-17
626	Guanylic Acid, 5'-	Not Specified	1985-29
412	Guar Gum	Not Specified	1975-19
414	Gum Arabic	Not Specified	1989-35
239	Hexamethylene Tetramine	0.15 mg/kg bw	1973-17
507	Hydrochloric Acid	Not Limited	1965-09
463	Hydroxypropyl Cellulose	Not Specified	1989-35
1442	Hydroxypropyl Distarch Phosphate	Not Specified	1982-26
464	Hydroxypropyl Methyl Cellulose	Not Specified	1989-35
1440	Hydroxypropyl Starch	Not Specified	1982-26
630	Inosinic Acid, 5'-	Not Specified	1985-29
1202	Insoluble Polyvinylpyrrolidone	Not Specified	1983-27
953	Isomalt	Not Specified	1985-29
384	Isopropyl Citrates	14 mg/kg bw	1973-17
416	Karaya Gum	Not Specified	1988-33
425	Konjac Flour	Not Specified	1996-46
270	Lactic Acid (L-, D- and DL-)	Not Limited	1973-17
472b	Lactic and Fatty Acid Esters of Glycerol	Not Limited	1973-17
966	Lactitol	Not Specified	1983-27
322	Lecithin	Not Limited	1973-17
1104	Lipase (Animal Sources)	Not Limited	1971-15
1104	Lipase (*Aspergillus oryzae*, var.)	Not Specified	1974-18
1105	Lysozyme Hydrochloride	Acceptable	1992-39
504i	Magnesium Carbonate	Not Specified	1965-09
511	Magnesium Chloride	Not Specified	1979-23
580	Magnesium Gluconate	Not Specified	1986-30, 1998-51
625	Magnesium Glutamate, Dl-L-	Not Specified	1987-31
504ii	Magnesium Hydrogen Carbonate	Not Specified	1979-23
528	Magnesium Hydroxide	Not Specified	1965-09
329	Magnesium Lactate, (DL-)	Not Limited	1979-23
530	Magnesium Oxide	Not Limited	1965-09
553i	Magnesium Silicate (Synthetic)	Not Specified	1982-26
296	Malic Acid (DL-)	Not Specified	1969-13
965	Maltitol and Maltitol Syrup	Not Specified	1993-41, 1997-49
421	Mannitol	Not Specified	1986-30
461	Methyl Cellulose	Not Specified	1989-35
465	Methyl Ethyl Cellulose	Not Specified	1989-35
460i	Microcrystalline Cellulose	Not Specified	1997-49
905ci	Microcrystalline Wax	20 mg/kg bw	1995-44
471	Mono- and Diglycerides	Not Limited	1973-17
624	Monoammonium Glutamate, L-	Not Specified	1987-31
622	Monopotassium Glutamate, L-	Not Specified	1987-31
621	Monosodium Glutamate, L-	Not Specified	1987-31
1410	Monostarch Phosphate	Not Specified	1982-26
941	Nitrogen	No ADI necessary	1980-24
942	Nitrous Oxide	Acceptable	1985-29
231	Ortho-Phenylphenol	See ORTHO-PHENYLPHENOL	1964-08
1404	Oxidized Starch	Not Specified	1982-26
387	Oxystearin	25 mg/kg bw	1973-17
1101ii	Papain	Not Limited	1971-15

INS	Additive	JECFA ADI	JECFA Review Date (year-mtg)
440	Pectins (Amidated and Non-Amidated)	Not Specified	1981-25
1413	Phosphated Distarch Phosphate	Not Specified	1982-26
235	Pimaricin	0.3 mg/kg bw	1976-20, 2001-57
1200	Polydextroses A and N	Not Specified	1987-31
900a	Polydimethylsiloxane	1.5 mg/kg bw	1979-23
1521	Polyethylene Glycol	10 mg/kg bw	1979-23
964	Polyglycitol Syrup	Not Specified	1998-51
1201	Polyvinylpyrrolidone	50 mg/kg bw	1986-30
261	Potassium Acetate	Not Specified	1973-17
402	Potassium Alginate	Not Specified	1992-39
303	Potassium Ascorbate	Not Specified	1981-25
212	Potassium Benzoate	See BENZOATES	1996-46
501i	Potassium Carbonate	Not Specified	1965-09
508	Potassium Chloride	Not Specified	1979-23
332i	Potassium Dihydrogen Citrate	Not Limited	1979-23
536	Potassium Ferrocyanide	See FERROCYANIDES	1974-18
577	Potassium Gluconate	Not Specified	1986-30, 1998-51
501ii	Potassium Hydrogen Carbonate	Not Specified	1965-09
351i	Potassium Hydrogen Malate	Not Specified	1982-26
525	Potassium Hydroxide	Not Limited	1965-09
326	Potassium Lactate (Solution)	Not Limited	1974-18
351ii	Potassium Malate	Not Specified	1979-23
283	Potassium Propionate	Not Limited	1973-17
515	Potassium Sulphate	Not Specified	1985-29
460ii	Powdered Cellulose	Not Specified	1976-20
407a	Processed Eucheuma Seaweed	Not Specified	1995-44, 2001-57
944	Propane	Not Specified	1979-23
280	Propionic Acid	Not Limited	1973-17
477	Propylene Glycol Esters of Fatty Acids	25 mg/kg bw	1973-17
1101i	Protease (*Asperigillus oryzae* var.)	Acceptable	1987-31
470	SALTS OF MYRISTIC, PALMITIC & STEARIC ACIDS (NH_4, Ca, K, Na)	Not Specified	1985-29
470	SALTS OF OLEIC ACID (Ca, K, Na)	Not Specified	1988-33, 1998-51
904	Shellac	Acceptable	1992-39
551	Silicon Dioxide (Amorphous)	Not Specified	1985-29
262i	Sodium Acetate	Not Specified	1973-17
401	Sodium Alginate	Not Specified	1992-39
554	Sodium Aluminosilicate	Not Specified	1985-29
301	Sodium Ascorbate	Not Specified	1981-25
211	Sodium Benzoate	See BENZOATES	1996-46
500i	Sodium Carbonate	Not Limited	1965-09
466	Sodium Carboxymethyl Cellulose	Not Specified	1989-35
469	Sodium Carboxymethyl, Cellulose Enzymatically Hydrolyzed	Not Specified	1998-51
331i	Sodium Dihydrogen Citrate	Not Limited	1979-23
316	Sodium Erythorbate	Not Specified	1990-37
535	Sodium Ferrocyanide	See FERROCYANIDES	1974-18
365	Sodium Fumarate	Not Specified	1989-35
576	Sodium Gluconate	Not Specified	1986-30, 1998-51
500ii	Sodium Hydrogen Carbonate	Not Specified	1965-09
350i	Sodium Hydrogen Malate	Not Specified	1982-26
524	Sodium Hydroxide	Not Limited	1965-09
325	Sodium Lactate(Solution)	Not Limited	1974-18
350ii	Sodium Malate	Not Specified	1979-23
232	Sodium o-Phenylphenol	See ORTHO-PHENYLPHENOL	1964-08
281	Sodium Propionate	Not Limited	1973-17
500iii	Sodium Sesquicarbonate	Not Specified	1981-25
514	Sodium Sulfate	Not Specified	1999-53, 2001-57
420	SORBITOL (INCLUDING SORBITOL SYRUP	Not Specified	1982-26

INS	Additive	JECFA ADI	JECFA Review Date (year-mtg)
512	Stannous Chloride	2 mg/kg bw	1982-26
1420	Starch Acetate	Not Specified	1982-26
1450	Starch Sodium Octenyl Succinate	Not Specified	1982-26
444	Sucrose Acetate Isobutyrate	20 mg/kg bw	1996-46
553iii	Talc	Not Specified	1986-30
417	Tara Gum	Not Specified	1986-30
472f	Tartaric, Acetic & Fatty Acid Esters of Glycerol (Mixed)	Not Limited	1973-17
957	Thaumatin	Not Specified	1985-29
479	Thermally Oxidized Soya Bean Oil with Mono- and Di-Glycerides of Fatty Acids (TOSOM)	30 mg/kg bw	1992-39
388	Thiodipropionic Acid	See THIODIPROPIONATES	1973-17
171	Titanium Dioxide	Not Limited	1969-13
413	Tragacanth Gum	Not Specified	1985-29
1518	Triacetin	Not Specified	1975-19
380	Triammonium Citrate	Not Limited	1979-23
1505	Triethyl Citrate	20 mg/kg bw	1984-28
332ii	Tripotassium Citrate	Not Specified	1973-17
331iii	Trisodium Citrate	Not Specified	1973-17
415	Xanthan Gum	Not Specified	1986-30
967	Xylitol	Not Specified	1983-27

DRAFT FOOD CATEGORY SYSTEM OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES

(AT STEP 8 OF THE PROCEDURE)

PART I: FOOD CATEGORIES

01.0 Dairy products and analogues, excluding products of food category 02.0

01.1 Milk and dairy-based drinks

01.1.1 Milk and buttermilk (plain)

01.1.1.1 Milk (plain)

01.1.1.2 Buttermilk (plain)

01.1.2 Dairy-based drinks, flavoured and/or fermented (e.g., chocolate milk, cocoa, eggnog, drinking yoghurt, whey-based drinks)

01.2 Fermented and renneted milk products (plain), excluding food category 01.1.2 (dairy-based drinks)

01.2.1 Fermented milks (plain)

01.2.1.1 Fermented milks (plain), not heat-treated after fermentation

01.2.1.2 Fermented milks (plain), heat-treated after fermentation

01.2.2 Renneted milk (plain)

01.3 Condensed milk and analogues (plain)

01.3.1 Condensed milk (plain)

01.3.2 Beverage whiteners

01.4 Cream (plain) and the like

01.4.1 Pasteurized cream (plain)

01.4.2 Sterilized and UHT creams, whipping and whipped creams, and reduced fat creams (plain)

01.4.3 Clotted cream (plain)

01.4.4 Cream analogues

01.5 Milk powder and cream powder, and powder analogues (plain)

01.5.1 Milk powder and cream powder (plain)

01.5.2 Milk and cream powder analogues

01.6 Cheese and analogues

01.6.1 Unripened cheese

01.6.2 Ripened cheese

01.6.2.1 Ripened cheese, includes rind

01.6.2.2 Rind of ripened cheese

01.6.2.3 Cheese powder (for reconstitution; e.g., for cheese sauces)

01.6.3 Whey cheese

01.6.4 Processed cheese

01.6.4.1 Plain processed cheese

01.6.4.2 Flavoured processed cheese, including containing fruit, vegetables, meat, etc.

01.6.5 Cheese analogues

01.6.6 Whey protein cheese

01.7 Dairy-based desserts (e.g., pudding, fruit or flavoured yoghurt)

01.8 Whey and whey products, excluding whey cheeses

01.8.1 Liquid whey and whey products, excluding whey cheeses

01.8.2 Dried whey and whey products, excluding whey cheeses

02.0 Fats and oils, and fat emulsions

02.1 Fats and oils essentially free from water

02.1.1 Butter oil, anhydrous milkfat, ghee

02.1.2 Vegetable oils and fats

02.1.3 Lard, tallow, fish oil, and other animal fats

02.2 Fat emulsions mainly of type water-in-oil

02.2.1 Emulsions containing at least 80% fat

02.2.1.1 Butter and concentrated butter

02.2.1.2 Margarine and similar products

02.2.1.3 Blends of butter and margarine

02.2.2 Emulsions containing less than 80% fat

02.3 Fat emulsions mainly of type oil-in-water, including mixed and/or flavoured products based on fat emulsions

02.4 Fat-based desserts excluding dairy-based dessert products of food category 01.7

03.0 Edible ices, including sherbet and sorbet

04.0 Fruits and vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.1 Fruit

04.1.1 Fresh fruit

04.1.1.1 Untreated fresh fruit

04.1.1.2 Surface-treated fresh fruit

04.1.1.3 Peeled or cut fresh fruit

04.1.2 Processed fruit

04.1.2.1 Frozen fruit

04.1.2.2 Dried fruit

04.1.2.3 Fruit in vinegar, oil, or brine

04.1.2.4 Canned or bottled (pasteurized) fruit

04.1.2.5 Jams, jellies, marmelades

04.1.2.6 Fruit-based spreads (e.g., chutney) excluding products of food category 04.1.2.5

04.1.2.7 Candied fruit

04.1.2.8 Fruit preparations, including pulp, purees, fruit toppings and coconut milk

04.1.2.9 Fruit-based desserts, including fruit-flavoured water-based desserts

04.1.2.10 Fermented fruit products

04.1.2.11 Fruit fillings for pastries

04.1.2.12 Cooked fruit

04.2 Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.2.1 Fresh vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds and nuts and seeds

04.2.1.1 Untreated fresh vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes (including soybeans), and aloe vera), seaweeds, and nuts and seeds

04.2.1.2 Surface-treated fresh vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.2.1.3 Peeled, cut or shredded fresh vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.2.2 Processed vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.2.2.1 Frozen vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.2.2.2 Dried vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds

04.2.2.3 Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds in vinegar, oil, brine, or soy sauce

04.2.2.4 Canned or bottled (pasteurized) or retort pouch vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds

04.2.2.5 Vegetable, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed purees and spreads (e.g., peanut butter)

04.2.2.6 Vegetable, (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed pulps and preparations (e.g., vegetable desserts and sauces, candied vegetables) other than food category 04.2.2.5

04.2.2.7 Fermented vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweed products, excluding fermented soybean products of food category 12.10

04.2.2.8 Cooked or fried vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds

05.0 Confectionery

05.1 Cocoa products and chocolate products including imitations and chocolate substitutes

05.1.1 Cocoa mixes (powders) and cocoa mass/cake

05.1.2 Cocoa mixes (syrups)

05.1.3 Cocoa-based spreads, including fillings

05.1.4 Cocoa and chocolate products

05.1.5 Imitation chocolate, chocolate substitute products

05.2 Confectionery including hard and soft candy, nougats, etc. other than food categories 05.1, 05.3, and 05.4

05.2.1 Hard candy

05.2.2 Soft candy

05.2.3 Nougats and marzipans

05.3 Chewing gum

05.4 Decorations (e.g., for fine bakery wares), toppings (non-fruit), and sweet sauces

06.0 Cereals and cereal products, derived from cereal grains, from roots and tubers, pulses and legumes, excluding bakery wares of food category 07.0

06.1 Whole, broken, or flaked grain, including rice

06.2 Flours and starches (including soybean powder)

06.2.1 Flours

06.2.2 Starches

06.3 Breakfast cereals, including rolled oats

06.4 Pastas and noodles and like products (e.g. rice paper, rice vermicelli, soybean pastas and noodles)

06.4.1 Fresh pastas and noodles and like products

06.4.2 Dried pastas and noodles and like products

06.4.3 Pre-cooked pastas and noodles and like products

06.5 Cereal and starch based desserts (e.g., rice pudding, tapioca pudding)

06.6 Batters (e.g., for breading or batters for fish or poultry)

06.7 Pre-cooked or processed rice products, including rice cakes (Oriental type only)

06.8 Soybean products (excluding soybean products of food category 12.9 and fermented soybean products of food category 12.10)

07.0 Bakery wares

07.1 Bread and ordinary bakery wares, and mixes

07.1.1 Breads and rolls

07.1.1.1 Yeast-leavened breads and specialty breads

07.1.1.2 Soda breads

07.1.2 Crackers, excluding sweet crackers

07.1.3 Other ordinary bakery products (e.g., bagels, pita, English muffins)

07.1.4 Bread-type products, including bread stuffing and bread crumbs

07.1.5 Steamed breads and buns

07.1.6 Mixes for bread and ordinary bakery wares

07.2 Fine bakery wares (sweet, salty, savoury) and mixes

07.2.1 Cakes, cookies and pies (e.g., fruit-filled or custard types)

07.2.2 Other fine bakery products (e.g., doughnuts, sweet rolls, scones, and muffins)

07.2.3 Mixes for fine bakery wares (e.g., cakes, pancakes)

08.0 Meat and meat products, including poultry and game

08.1 Fresh meat, poultry and game

08.1.1 Fresh meat, poultry and game, whole pieces or cuts

08.1.2 Fresh meat, poultry and game, comminuted

08.2 Processed meat, poultry, and game products in whole pieces or cuts

08.2.1 Non-heat treated processed meat, poultry, and game products in whole pieces or cuts

08.2.1.1 Cured (including salted) non-heat treated processed meat, poultry, and game products in whole pieces or cuts

08.2.1.2 Cured (including salted) and dried non-heat treated processed meat, poultry, and game products in whole pieces or cuts

08.2.1.3 Fermented non-heat treated processed meat, poultry, and game products in whole pieces or cuts

08.2.2 Heat-treated processed meat, poultry, and game products in whole pieces or cuts

08.2.3 Frozen processed meat, poultry, and game products in whole pieces or cuts

08.3 Processed comminuted meat, poultry, and game products

08.3.1 Non-heat treated processed comminuted meat, poultry, and game products

08.3.1.1 Cured (including salted) non-heat treated processed comminuted meat, poultry, and game products

08.3.1.2 Cured (including salted) and dried non-heat treated processed comminuted meat, poultry, and game products

08.3.1.3 Fermented non-heat treated processed comminuted meat, poultry, and game products

08.3.2 Heat-treated processed comminuted meat, poultry, and game products

08.3.3 Frozen processed comminuted meat, poultry, and game products

08.4 Edible casings (e.g., sausage casings)

09.0 Fish and fish products, including molluscs, crustaceans, and echinoderms

09.1 Fresh fish and fish products, including molluscs, crustaceans, and echinoderms

09.1.1 Fresh fish

09.1.2 Fresh molluscs, crustaceans and echinoderms

09.2 Processed fish and fish products, including molluscs, crustaceans, and echinoderms

09.2.1 Frozen fish, fish fillets, and fish products, including molluscs, crustaceans, and echinoderms

09.2.2 Frozen battered fish, fish fillets and fish products, including molluscs, crustaceans, and echinoderms

09.2.3 Frozen minced and creamed fish products, including molluscs, crustaceans, and echinoderms

09.2.4 Cooked and/or fried fish and fish products, including molluscs, crustaceans, and echinoderms

09.2.4.1 Cooked fish and fish products

09.2.4.2 Cooked molluscs, crustaceans, and echinoderms

09.2.4.3 Fried fish and fish products, including molluscs, crustaceans, and echinoderms

09.2.5 Smoked, dried, fermented, and/or salted fish and fish products, including molluscs, crustaceans, and echinoderms

09.3 Semi-preserved fish and fish products, including molluscs, crustaceans, and echinoderms

09.3.1 Fish and fish products, including molluscs, crustaceans, and echinoderms, marinated and/or in jelly

09.3.2 Fish and fish products, including molluscs, crustaceans, and echinoderms, pickled and/or in brine

09.3.3 Salmon substitutes, caviar, and other fish roe products

09.3.4 Semi-preserved fish and fish products, including molluscs, crustaceans, and echinoderms (e.g., fish paste), excluding products of food categories 09.3.1 - 09.3.3

09.4 Fully preserved, including canned or fermented fish and fish products, including molluscs, crustaceans, and echinoderms

10.0 Eggs and egg products

10.1 Fresh eggs

10.2 Egg products

10.2.1 Liquid egg products

10.2.2 Frozen egg products

10.2.3 Dried and/or heat coagulated egg products

10.3 Preserved eggs, including alkaline, salted, and canned eggs

10.4 Egg-based desserts (e.g., custard)

11.0 Sweeteners, including honey

11.1 Refined and raw sugars

11.1.1 White sugar, dextrose anhydrous, dextrose monohydrate, fructose

11.1.2 Powdered sugar, powdered dextrose

11.1.3 Soft white sugar, soft brown sugar, glucose syrup, dried glucose syrup, raw cane sugar

11.1.3.1 Dried glucose syrup used to manufacture sugar confectionery

11.1.3.2 Glucose syrup used to manufacture sugar confectionery

11.1.4 Lactose

11.1.5 Plantation or mill white sugar

11.2 Brown sugar excluding products of food category 11.1.3

11.3 Sugar solutions and syrups, also (partially) inverted, including treacle and molasses, excluding products of food category 11.1.3

11.4 Other sugars and syrups (e.g., xylose, maple syrup, sugar toppings)

11.5 Honey

11.6 Table-top sweeteners, including those containing high-intensity sweeteners

12.0 Salts, spices, soups, sauces, salads, protein products (including soybean protein products), and fermented soybean products

12.1 Salt and salt substitutes

12.1.1 Salt

12.1.2 Salt substitutes

12.2 Herbs, spices, seasonings, and condiments (e.g., seasoning for instant noodles)

12.2.1 Herbs and spices

12.2.2 Seasonings and condiments

12.3 Vinegars

12.4 Mustards

12.5 Soups and broths

12.5.1 Ready-to-eat soups and broths, including canned, bottled, and frozen

12.5.2 Mixes for soups and broths

12.6 Sauces and like products

12.6.1 Emulsified sauces (e.g., mayonnaise, salad dressing)

12.6.2 Non-emulsified sauces (e.g., ketchup, cheese sauce, cream sauce, brown gravy)

12.6.3 Mixes for sauces and gravies

12.6.4 Clear sauces (e.g., fish sauce)

12.7 Salads (e.g., macaroni salad, potato salad) and sandwich spreads excluding cocoa-and nut-based spreads of food categories 04.2.2.5 and 05.1.3

12.8 Yeast and like products

12.9 Protein products

12.9.1 Soybean protein products

12.9.1.1 Soybean beverage

12.9.1.2 Soybean beverage film

12.9.1.3 Other soybean protein products (including non-fermented soy sauce)

12.9.2 Fresh bean curd (tofu)

12.9.3 Semi-dehydrated bean curd

12.9.3.1 Thick gravy-stewed semi-dehydrated bean curd

12.9.3.2 Deep fried semi-dehydrated bean curd

12.9.3.3 Semi-dehydrated bean curd, other than food categories 12.9.3.1 and 12.9.3.2

12.9.4 Dehydrated bean curd (kori tofu)

12.9.5 Other protein products

12.10 Fermented soybean products

12.10.1 Fermented soybeans (e.g., natto)

12.10.2 Fermented soybean curd (soybean cheese)

12.10.3 Fermented soybean paste (e.g., miso)

12.10.4 Fermented soy sauce

13.0 Foodstuffs intended for particular nutritional uses

13.1 Infant formulae, follow up formulae, and formulae for special medical purposes for infants

13.1.1 Infant formulae

13.1.2 Follow-up formulae

13.1.3 Formulae for special medical purposes for infants

13.2 Complementary foods for infants and young children

13.3 Dietetic foods intended for special medical purposes (excluding products of food category 13.1)

13.4 Dietetic formulae for slimming purposes and weight reduction

13.5 Dietetic foods (e.g., supplementary foods for dietary use) excluding products of food categories 13.1-13.4 and 13.6

13.6 Food supplements

14.0 Beverages, excluding dairy products

14.1 Non-alcoholic ("soft") beverages

14.1.1 Waters

14.1.1.1 Natural mineral waters and source waters

14.1.1.2 Table waters and soda waters

14.1.2 Fruit and vegetable juices

14.1.2.1 Fruit juice

14.1.2.2 Vegetable juice

14.1.2.3 Concentrates for fruit juice

14.1.2.4 Concentrates for vegetable juice

14.1.3 Fruit and vegetable nectars

14.1.3.1 Fruit nectar

14.1.3.2 Vegetable nectar

14.1.3.3 Concentrates for fruit nectar

14.1.3.4 Concentrates for vegetable nectar

14.1.4 Water-based flavoured drinks, including "sport," “energy,” or "electrolyte" drinks and particulated drinks

14.1.4.1 Carbonated water-based flavoured drinks

14.1.4.2 Non-carbonated water-based flavoured drinks, including punches and ades

14.1.4.3 Concentrates (liquid or solid) for water-based flavoured drinks

14.1.5 Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa

14.2 Alcoholic beverages, including alcohol-free and low-alcoholic counterparts

14.2.1 Beer and malt beverages

14.2.2 Cider and perry

14.2.3 Grape wines

14.2.3.1 Still grape wine

14.2.3.2 Sparkling and semi-sparkling grape wines

14.2.3.3 Fortified grape wine, grape liquor wine, and sweet grape wine

14.2.4 Wines (other than grape)

14.2.5 Mead

14.2.6 Distilled spirituous beverages containing more than 15% alcohol

14.2.7 Aromatized alcoholic beverages (e.g., beer, wine and spirituous cooler-type beverages, low-alcoholic refreshers)

15.0 Ready-to-eat savouries

15.1 Snacks - potato, cereal, flour or starch based (from roots and tubers, pulses and legumes)

15.2 Processed nuts, including coated nuts and nut mixtures (with e.g., dried fruit)

15.3 Snacks - fish based

16.0 Composite foods - foods that could not be placed in food categories 01 - 15.

PART II: FOOD CATEGORY DESCRIPTORS

01.0 Dairy products and analogues, excluding products of food category 02.0:

Includes all types of dairy products that are derived from the milk of any milking animal (e.g., cow, sheep, goat, buffalo). In this category, a "plain" product is one that is not flavoured, nor contains fruit, vegetables or other non-dairy ingredients, nor is mixed with other non-dairy ingredients, unless permitted by relevant standards.[1] Analogues are products in which milk fat has been partially or wholly replaced by vegetable fats or oils.

01.1 Milk and dairy-based drinks:

Includes all plain and flavoured fluid milk products based on skim, part-skim, low-fat and whole milk.

01.1.1 Milk and buttermilk (plain):

Includes plain fluid products only. Includes reconstituted plain milk that contains only dairy ingredients.

01.1.1.1 Milk (plain):

Fluid milk obtained from milking animals (e.g., cows, sheep, goats, buffalo). Milk is usually heat-treated by pasteurization, ultra-high temperature (UHT) treatment or sterilization.[2] Includes skim, part-skim, low-fat and whole milk.

01.1.1.2 Buttermilk (plain):

Buttermilk is the nearly milkfat-free fluid remaining from the butter-making process (i.e., the churning fermented or non-fermented milk and cream). Buttermilk is also produced by fermentation of fluid skim milk, either by spontaneous souring by the action of lactic acid-forming or aroma-forming bacteria, or by inoculation of heated milk with pure bacterial cultures (cultured buttermilk).[3] Buttermilk may be pasteurized or sterilized.

01.1.2 Dairy-based drinks, flavoured and/or fermented (e.g., chocolate milk, cooca, eggnog, drinking yoghurt, whey-based drinks):

Includes all ready-to-drink flavoured and aromatized milk-based fluid beverages and their mixes, excluding mixes for cocoa (cocoa-sugar mixtures, food category 05.1.1). Examples include: hot chocolate, chocolate malt drinks, strawberry-flavoured yoghurt drink, lactic acid bacteria drinks, and *lassi* (liquid obtained by whipping curd from the lactic acid fermentation of milk, and mixing with sugar or synthetic sweetener) .

01.2 Fermented and renneted milk products (plain), excluding food category 01.1.2 dairy-based drinks):

Includes all plain products based on skim, part-skim, low-fat and whole milk. Flavoured products are included in food categories 01.1.2 (beverages) and 01.7 (desserts).

01.2.1 Fermented milks (plain):

Includes all plain products, including fluid fermented milk, acidified milk and cultured milk. Plain yoghurt, which does not contain flavours or colours, may be found in one of the sub-categories of 01.2.1 depending on whether it is heat-treated after fermentation or not.

01.2.1.1 Fermented milks (plain), not heat-treated after fermentation:

Includes fluid and non-fluid plain products, such as yoghurt and sweetened yoghurt.[4]

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1 The definition of "plain" was provided in the comments by IDF on the FCS (32nd CCFAC, CRD 4).
2 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 389.
3 Ibid., p. 392.
4 Codex Standard for Yoghurt and Sweetened Yoghurt (CXSN A-11(a)-1975). Yoghurt as defined in this standard does not permit the use of colours and flavours as optional ingredients.

01.2.1.2 Fermented milks (plain), heat-treated after fermentation:

Products similar to that in food category 01.2.1.1, except that they have been heat-treated (e.g., sterilized or pasteurized) after fermentation.

01.2.2 Renneted Milk (plain):

Plain, coagulated milk produced by the action of milk coagulating enzymes. Includes curdled milk. Flavoured renneted milk products are found in food category 01.7.

01.3 Condensed milk and analogues (plain):

Includes plain and sweetened types of condensed milk, evaporated milk, and their analogues (including beverage whiteners). Includes products based on skim, part-skim, low-fat and whole milk, and filled milk.

01.3.1 Condensed milk (plain):

Condensed milk is obtained by partial removal of water from milk to which sugar may have been added. For evaporated milk, the water removal may be accomplished by heating.[5] Includes partially dehydrated milk, evaporated milk, sweetened condensed milk, and *khoa* (cow or buffalo milk concentrated by boiling) .

01.3.2 Beverage whiteners:

Milk or cream substitute consisting of a vegetable fat-water emulsion in water with milk protein and lactose or vegetable proteins for use in beverages such as coffee and tea. Also includes the same type of products in powdered form. Includes condensed milk analogues and filled condensed milk.

01.4 Cream (plain) and the like:

Cream is a fluid dairy product, relatively high in fat content in comparison to milk. Includes all plain fluid, semi-fluid and semi-solid cream and cream analogue products. Flavoured cream products are found in food categories 01.1.2 (beverages) and 01.7 (desserts).

01.4.1 Pasteurized cream (plain):

Cream subjected to pasteurization by appropriate heat treatment or made from pasteurized milk.[6] Includes milk cream and "half-and-half."

01.4.2 Sterilized and UHT creams, whipping and whipped creams, and reduced fat creams (plain):

Includes every cream, regardless of fat content, which has undergone a higher heat-treatment than pasteurization. Also includes pasteurized creams with a reduced fat content, as well as every cream intended for whipping or being whipped. Sterilized cream is subjected to appropriate heat-treatment in the container in which it is presented to the consumer. Ultra-heat treated (UHT) or ultrapasteurized cream is subjected to the appropriate heat treatment (UHT or ultrapasteurization) in a continuous flow process and aseptically packaged. Cream may also be packaged under pressure (whipped cream).[6] Includes whipping cream, heavy cream, whipped pasteurized cream, and whipped cream-type dairy toppings and fillings. Creams or toppings with partial or total replacement of milkfat by other fats are included in sub-category 01.4.4 (cream analogues).

01.4.3 Clotted cream (plain):

Thickened, viscous cream formed from the action of milk coagulating enzymes. Includes sour cream (cream subjected to lactic acid fermentation achieved as described for buttermilk (food category 01.1.1.2).[7]

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5 Codex Standard for Evaporated Milk (CXSN A-03-1999, Rev. 1).

6 Codex Standard for Cream for Direct Consumption (CXSN A-09-1976).

7 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 393.

01.4.4 Cream analogues

Cream substitute consisting of a vegetable fat-water emulsion in liquid or powdered form for use other than as a beverage whitener (food category 01.3.2). Includes instant whipped cream toppings and sour cream substitutes.

01.5 Milk powder and cream powder and powder analogues (plain):

Includes plain milk powders, cream powders, or combination of the two, and their analogues. Includes products based on skim, part-skim, low-fat and whole milk.

01.5.1 Milk powder and cream powder (plain):

Milk products obtained by partial removal of water from milk or cream and produced in a powdered form.[8] Includes casein and caseinates.[9]

01.5.2 Milk and cream powder analogues

Products based on a fat-water emulsion and dried for use other than as a beverage whitener (food category 01.3.2). Examples include imitation dry cream mix and filled milk powder.

01.6 Cheese and analogues:

Cheese and cheese analogues are products that have water and fat included within a coagulated milk-protein structure. Products such as cheese sauce (food category 12.6.2), cheese-flavoured snacks (food category 15.1), and composite prepared foods containing cheese as an ingredient (e.g., macaroni and cheese; food category 16.0) are categorized elsewhere.

01.6.1 Unripened cheese:

Unripened cheese, including fresh cheese, is ready for consumption soon after manufacture.[10] Examples include cottage cheese (a soft, unripened, coagulated curd cheese), creamed cottage cheese (cottage cheese covered with a creaming mixture),[11] cream cheese (rahmfrischkase, an uncured, soft spreadable cheese),[12] mozzarella and scamorza cheeses. Includes the whole unripened cheese and unripened cheese rind (for those unripened cheeses with a "skin" such as mozzarella). Most products are plain, however, some, such as cottage cheese and cream cheese, may be flavoured or contain ingredients such as fruit, vegetables or meat. Excludes ripened cream cheese, where cream is a qualifier for a high fat content.

01.6 2 Ripened cheese:

Ripened cheese is not ready for consumption soon after manufacture, but is held under such time and temperature conditions so as to allow the necessary biochemical and physical changes that characterize the specific cheese. For mould-ripened cheese, the ripening is accomplished primarily by the development of characteristic mould growth throughout the interior and/or on the surface of the cheese.[10] Ripened cheese may be soft (e.g., camembert), firm (e.g., edam, gouda), hard (e.g., cheddar), or extra-hard. Includes cheese in brine, which is a ripened semi-hard to soft cheese, white to yellowish in colour with a compact texture, and without actual rind that has been preserved in brine until presented to the consumer.[13]

01.6.2.1 Ripened cheese, includes rind:

Refers to ripened (including mould-ripened) cheese, including rind, or any part thereof, such as cut, shredded, grated or sliced cheese. Examples of ripened cheese include: blue cheese, brie, gouda, havarti, hard grating cheese, and Swiss cheese.

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8 Codex Standard for Milk Powder and Cream Powder (CXSN 207-1999).
9 Codex Standard for Edible Casein Products (CXSN A-18-2001, Rev. 1).
10 Codex Standard for Cheese (CXSN A-06-1999, Rev. 1, Amended 2001).
11 Codex Standard for Cottage Cheese and Creamed Cottage Cheese (CXSN C-16-1968).
12 Codex Standard for Cream Cheese (Rahnfrischkase) (CXSN C-31-1973).
13 Codex Standard for Cheese in Brine (CXSN 208-1999, Amended 2001).

01.6.2.2 Rind of ripened cheese:

Refers to the rind only of the cheese.The rind of the cheese is the exterior portion of the cheese mass that initially has the same composition as the interior portion of the cheese, but which may dry after brining and ripening.[14]

01.6.2.3 Cheese powder (for reconstitution; e.g., for cheese sauces):

Dehydrated product prepared from a variety or processed cheese. Does not include grated or shredded cheese (food category 01.6.2.1 for variety cheese; food category 01.6.4 for processed cheese). Product is intended either to be reconstituted with milk or water to prepare a sauce, or used as-is as an ingredient (e.g., with cooked macaroni, milk and butter to prepare a macaroni and cheese casserole). Includes spray-dried cheese.

01.6.3 Whey cheese:

A solid or semi-solid product obtained by concentration of whey with or without the addition of milk, cream or other materials of milk origin, and moulding of the concentrated product.[15] Includes the whole cheese and the rind of the cheese. Different from whey protein cheese (food category 01.6.6).

01.6.4 Processed cheese:

Product with a very long shelf life obtained by melting and emulsifying cheese. Includes products manufactured by heating and emulsifying mixtures of cheese, milkfat, milk protein, milk powder, and water in different amounts. Products may contain other added ingredients, such as aromas, seasonings and fruit, vegetables and/or meat. Product may be spreadable or cut into slices and pieces.[16] The term "processed" does not mean cutting, grating, shredding, etc. of cheese. Cheese treated by these mechanical processes are included under food category 01.6.2 (Ripened cheese).

01.6.4.1 Plain processed cheese:

Processed cheese product that does not contain added flavours, seasonings, fruit, vegetables and/or meat. Examples include: American cheese, requeson.

01.6.4.2 Flavoured processed cheese, including containing fruit, vegetables, meat, etc.:

Processed cheese product that contains added flavours, seasonings, fruit, vegetables and/or meat. Examples include: neufchatel cheese spread with vegetables, pepper jack cheese, cheddar cheese spread with wine, and cheese balls (formed processed cheese coated in nuts, herbs or spices).

01.6.5 Cheese analogues:

Products that look like cheese, but in which milkfat has been partly or completely replaced by other fats. Includes imitation cheese, imitation cheese mixes, and imitation cheese powders.

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14 The rind is different from the coating of a cheese. The coating is either: (1) a film of synthetic or natural material, which helps to regulate the humidity during ripening and protects the cheese against microorganisms; or (2) a layer, primarily of wax, paraffin or plastic, which normally is impermeable to moisture, that protects the cheese after ripening against microorganisms and against physical damage during retail handling and, that in some cases, contributes to the specific appearance of the cheese (e.g., coloured surface). See Denmark's comments CX/FAC 02/6-Add. 1.

15 Codex Standard for Whey Cheese (CXSN A-07-1999, Rev. 1).

16 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 400. See also Codex Standard for Named Variety Process(ed) Cheese and Spreadable Process(ed) Cheese (CXSN A-08a-1978), Codex Standard for Process(ed) Cheese and Spreadable Process(ed) Cheese (CXSN A-08b-1978), and Codex Standard for Process(ed) Cheese Preparations (Process(ed) Cheese Food and Process(ed) Cheese Spread)) (CXSN A-08c-1978).

01.6.6 Whey protein cheese:

Product containing the protein extracted from the whey component of milk. These products are principally made by coagulation of whey proteins. Example: ricotta cheese. Different from whey cheese (food category 01.6.3).

01.7 Dairy-based desserts (e.g., pudding, fruit or flavoured yoghurt):

Includes ready-to-eat flavoured dairy dessert products and dessert mixes. Includes frozen dairy confections and novelties, and dairy-based fillings. Includes flavoured yoghurt (a milk product obtained by fermentation of milk and milk products to which flavours and ingredients (e.g., fruit, cocoa, coffee) have been added) that may or may not be heat-treated after fermentation.[17] Other examples include: ice cream (frozen dessert that may contain whole milk, skim milk products, cream or butter, sugar, vegetable oil, egg products, and fruit, cocoa, or coffee), ice milk (product similar to ice cream with reduced whole or skim milk content, or made with nonfat milk), jellied milk, frozen flavoured yoghurt, junket (sweet custard-like dessert made from flavoured milk set with rennet), dulce de leche (cooked milk with sugar and added ingredients such as coconut or chocolate), butterscotch pudding and chocolate mousse. Includes traditional milk-based sweets prepared from milk concentrated partially, from *khoa* (cow or buffalo milk concentrated by boiling), or *chhena* (cow or buffalo milk, heat-coagulated aided by acids like citric acid, lactic acid, malic acid, etc.), sugar or synthetic sweetener, and other ingredients (e.g., *maida* (refined wheat flour), flavours and colours (e.g., *peda*, *burfee*, milk cake, *gulab jamun*, *rasgulla*, *rasmalai*, *basundi*). These products are different from those in food category 03.0 (edible ices, including sherbet and sorbet) in that the foods in food category 01.7 are dairy-based, while those in 03.0 are water-based and contain no dairy ingredients.

01.8 Whey and whey products, excluding whey cheeses:

Includes a variety of whey-based products in liquid and powdered forms.

01.8.1 Liquid whey and whey products, excluding whey cheeses:

Whey is the fluid separated from the curd after coagulation of milk, cream, skimmed milk or buttermilk with milk coagulating enzymes during the manufacture of cheese, casein or similar products. Acid whey is obtained after the coagulation of milk, cream, skimmed milk or buttermilk, mainly with acids of the type used for the manufacture of fresh cheese.[18]

01.8.2 Dried whey and whey products, excluding whey cheeses:

Whey powders are prepared by spray- or roller-drying whey or acid whey from which the major portion of the milkfat has been removed.[18]

02.0 Fats and oils, and fat emulsions:

Includes all fat-based products that are derived from vegetable, animal or marine sources, or their mixtures.

02.1 Fats and oils essentially free from water:

Edible fats and oils are foods composed mainly of triglycerides of fatty acids from vegetable, animal or marine sources.[19]

02.1.1 Butter oil, anhydrous milkfat, ghee:

The milkfat products anhydrous milkfat, anhydrous butter oil and butter oil are products derived exclusively from milk and/or products obtained from milk by a process that almost completely removes water and non-fat solids. Ghee is a product obtained exclusively from milk, cream or butter by a process that almost completely removes water and non-fat solids; it has a specially developed flavour and physical structure.[20]

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17 Codex Standard for Flavoured Yoghurt and Products Heat-Treated After Fermentation (CXSN A-11b-1976).
18 Codex Standard for Whey Powder (CXSN A-15-1995).
19 Codex General Standard for Edible Fats and Oils Not Covered by Individual Standards (CXSN 019-1999).
20 Codex Standard for Milkfat Products (CXSN A-02-1999, Rev. 1).

02.1.2 Vegetable oils and fats:

Edible fats and oils obtained from edible plant sources. Products may be from a single plant source or marketed and used as blended oils that are generally designated as edible, cooking, frying, table or salad oils.[21] Virgin oils are obtained by mechanical means (e.g., pressing or expelling), with application of heat only so as not to alter the natural composition of the oil. Virgin oils are suitable for consumption in the natural state. Cold pressed oils are obtained by mechanical means without application of heat.[19, 22] Examples include: virgin olive oil, cottonseed oil, peanut oil, and vanaspati.

02.1.3 Lard, tallow, fish oil, and other animal fats:

All animal fats and oils should be derived from animals in good health at the time of slaughter and intended for human consumption. Lard is fat rendered from the fatty tissue of swine. Edible beef fat is obtained from fresh bovine fatty tissue covering the abdominal cavity and surrounding the kidney and heart, and from other compact, undamaged fat tissues. Such fresh fat obtained at the time of slaughter is the "killing fat." Prime beef fat (premiere jus or oleo stock) is obtained by low-heat rendering (50-55^{o}C) of killing fat and selected fat trimmings (cutting fat). Secunda beef fat is a product with typical beef fat odour and taste obtained by rendering (60-65^{o}C) and purifying beef fat. Rendered pork fat is fat obtained from the tissue and bones of swine. Edible tallow (dripping) is produced by the rendering of fatty tissue (excluding trimmings and cutting fat), attached muscles and bones of bovine animals or sheep. Fish oils are derived from suitable sources such as herring, sardines, sprat, and anchovies.[23, 24] Other examples include: tallow and partially defatted beef or pork fatty tissue.

02.2 Fat emulsions mainly of type water-in-oil:

Include all emulsified products excluding fat-based counterparts of dairy products and dairy desserts.

02.2.1 Emulsions containing at least 80% fat:

Include all full-fat products. Their fat-reduced counterparts are found in food category 02.2.2.

02.2.1.1 Butter and concentrated butter:

Butter is a fatty product consisting of a primarily water-in-oil emulsion derived exclusively from milk and/or products obtained from milk.[25]

02.2.1.2 Margarine and similar products:

Margarine is a spreadable or fluid water-in-oil emulsion produced mainly from edible fats and oils.[26]

02.2.1.3 Blends of butter and margarine:

Butter-margarine blends are mixtures of butter (milkfat) and margarine (edible fats and oils).

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21 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 472-476.
22 Codex Standard for Olive Oil (CXSN 033-1989, Rev. 1); and Codex Standard for Named Vegetable Oils (CXSN 210-1999, Amended 2001).
23 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 472-476.
24 Codex Standard for Named Animal Fats (CXSN 211-1999).
25 Codex Standard for Butter (CXSN A-01-1999, Rev. 1).
26 Codex Standard for Margarine (CXSN 032- 1989, Rev. 1).

02.2.2 Emulsions containing less than 80% fat:

Includes reduced-fat counterparts of butter, margarine, and their mixtures. Includes products derived from butter (e.g., "butterine," a spreadable butter blend with vegetable oils).[27] Includes minarine, a spreadable water-in-oil emulsion produced principally from water and edible fats and oils that are not solely derived from milk.[28] Also includes dairy spreads (reduced fat-based products derived from dairy fat (e.g., milkfat)), and other reduced-fat spreads derived from animal or vegetable fats (e.g., three-quarter fat butter, three-quarter fat margarine, or three-quarter fat butter-margarine blends).

02.3 Fat emulsions mainly of type oil-in-water, including mixed and/or flavoured products based on fat emulsions:

Includes fat-based counterparts of dairy-based foods excluding dessert products. The fat portion of these products are derived from sources other than milkfat (e.g., vegetable fats and oils). Examples include: filled or imitation milk (a fat-substituted milk produced from nonfat milk solids by addition of vegetable fats (coconut, safflower or corn oil))[33] non-dairy whipped cream; non-dairy toppings; and vegetable cream. Mayonnaise is included in food category 12.6.1.

02.4 Fat-based desserts excluding dairy-based dessert products of food category 01.7:

Includes fat-based counterparts of dairy-based desserts, which are found in food category 01.7. Includes ready-to-eat products and their mixes. Also includes non-dairy fillings for desserts. An example is an ice cream-like product made with vegetable fats.

03.0 Edible ices, including sherbet and sorbet:

This category includes water-based frozen desserts, confections and novelties, such as fruit sorbet, "Italian"-style ice, and flavoured ice. Frozen desserts containing primarily dairy ingredients are included in food category 01.7.

04.0 Fruits and vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

This major category is divided into two categories: 04.1(Fruit) and 04.2 (Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds). Each of these categories is further divided into sub-categories for fresh and processed products.

04.1 Fruit:

Includes all fresh (food category 04.1.1) and processed (food category 04.1.2) products.

04.1.1 Fresh fruit:

Fresh fruit is generally free of additives. However, fresh fruit that is coated or cut or peeled for presentation to the consumer may contain additives.

04.1.1.1 Untreated fresh fruit:

Raw fruit presented fresh from harvest.

04.1.1.2 Surface-treated fresh fruit:

The surfaces of certain fresh fruit are coated with glazes or waxes or are treated with other food additives that act as protective coatings and/or help to preserve the freshness and quality of the fruit. Examples include apples, oranges, dates, and longans.

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27 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 395.

28 Codex Standard for Minarine (CXSN 135-1989, Rev. 1).

04.1.1.3 Peeled or cut fresh fruit:

Fresh fruit that is cut or peeled and presented to the consumer, e.g., in a fruit salad. Includes fresh shredded or flaked coconut.

04.1.2 Processed fruit:

Includes all forms of processing other than peeling, cutting and surface treating fresh fruit.

04.1.2.1 Frozen fruit:

Fruit that may or may not be blanched prior to freezing. The product may be frozen in a juice or sugar syrup.[29] Examples include frozen fruit salad and frozen strawberries.

04.1.2.2 Dried fruit:

Fruit from which water is removed to prevent microbial growth.[29] Includes dried fruit leathers (fruit rolls) prepared by drying fruit purees. Examples include dried apple slices, raisins, dried shredded or flaked coconut, and prunes.

04.1.2.3 Fruit in vinegar, oil, or brine:

Includes pickled products such as pickled plums, mango pickles, lime pickles, pickled gooseberries, and pickled watermelon rind. Oriental pickled ("cured" or "preserved") fruit products are sometimes referred to as "candied" fruit.[30] These are not the candied fruit products of food category 04.1.2.7 (i.e., dried, sugar coated fruit).

04.1.2.4 Canned or bottled (pasteurized) fruit:

Fully preserved product in which fresh fruit is cleaned and placed in cans or jars with natural juice or sugar syrup (including artificially sweetened syrup) and heat-sterilized or pasteurized.[29] Includes products processed in retort pouches. Examples include: canned fruit salad, and applesauce in jars.

04.1.2.5 Jams, jellies, marmelades:

Jams, preserves and conserves are thick, spreadable products prepared by boiling whole fruit or pieces of fruit, fruit pulp or puree, with or without fruit juice or concentrated fruit juice, and sugar to thicken, and to which pectin and fruit pieces may be added. Jelly is a clear spreadable product prepared similarly to jam, except that it is has a smoother consistency and does not contain fruit pieces. Marmelade is a thick spreadable fruit slurry prepared from whole fruit, fruit pulp or puree (usually citrus), and boiled with sugar to thicken, to which pectin and fruit pieces and fruit peel pieces may be added.[29, 31] Includes dietetic counterparts made with non-nutritive high-intensity sweeteners. Examples include: orange marmelade, grape jelly, and strawberry jam.

04.1.2.6 Fruit-based spreads (e.g., chutney) excluding products of food category 04.1.2.5:

Includes all other fruit-based spreads, such as apple butter and lemon curd. Also includes condiment-type fruit products such as mango chutney and raisin chutney.

04.1.2.7 Candied fruit:

Includes glazed fruits (fruit treated with a sugar solution and dried), candied fruit (dried glazed fruit immersed in a sugar solution and dried so that the fruit is covered by a candy-like sugar shell), and crystallized fruit is prepared (dried glazed fruit rolled in icing or granulated sugar and dried).[29] Examples include: cocktail (maraschino) cherries, candied citrus peel, candied citrons (e.g., used in holiday fruitcakes), and mostarda di frutta.

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29 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 613-617.

30 *Asian Foods: Science and Technology*, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 10: Fruit Products, J.X. Shi & B.S. Luh, Technomic Publishing Co., Lancaster PA 1999, p. 290.

31 Codex Standard for Jams (Fruit Preserves) and Jellies (CXSN 079-1981); and Codex Standard for Citrus Marmelade (CXSN 080-1981).

04.1.2.8 Fruit preparations, including pulp, purees, fruit toppings and coconut milk:

Fruit pulp is not usually intended for direct consumption. It is a slurry of lightly steamed and strained fresh fruit, with or without added preservatives. Fruit puree (e.g., mango puree, prune puree) is produced in the same way, but has a smoother, finer texture, and may be used as fillings for pastries, but is not limited to this use. Fruit sauce (e.g., pineapple sauce or strawberry sauce) is made from boiled fruit pulp with or without added sweeteners and may contain fruit pieces. Fruit sauce may be used as toppings for fine bakery wares and ice cream sundaes. Fruit syrup (e.g., blueberry syrup) is a more liquid form of fruit sauce that may be used as a topping e.g., for pancakes.[29] Non-fruit toppings are included in food category 05.4 (sugar- and chocolate-based toppings) and sugar syrups (e.g., maple syrup) are included in food category 11.4. Coconut milk and coconut cream are products prepared using a significant amount of separated, whole, disintegrated macerated or comminuted fresh endosperm (kernel) of coconut palm and expelled, where most filterable fibers and residues are excluded, with or without coconut water, and/or with additional water. Coconut milk and coconut cream are treated by heat pasteurization, sterilization or ultrahigh temperature (UHT) processes. Coconut milk and coconut cream may also be produced in concentrated or skim (or "light") forms.[32] Examples of traditional foods in this sub-category are: tamarind concentrate (clean extract of tamarind fruit with not less than 65% total soluble solids), tamarind powder (tamarind paste mixed with tapioca starch), tamarind toffee (mixture of tamarind pulp, sugar, milk solids, antioxidants, flavours, stabilizers and preservatives), and fruit bars (a mixture of fruit (mango, pineapple, or guava) pulp mixed with sugar, flavours, and preservatives, dried into a sheet).

04.1.2.9 Fruit-based desserts, including fruit-flavoured water-based desserts:

Includes the ready-to-eat products and mixes. Includes fruit-flavoured gelatin, rote gruze, frutgrod, fruit compote, nata de coco, and *mitsumame* (gelatin-like dessert of agar jelly, fruit pieces and syrup). This category does not include fine bakery wares containing fruit (food categories 07.2.1 and 07.2.2), fruit-flavoured edible ices (food category 03.0), or fruit-containing frozen dairy desserts (food category 01.7).

04.1.2.10 Fermented fruit products:

Type of pickled product produced by preservation in salt by lactic acid fermentation. Examples include: fermented plums.

04.1.2.11 Fruit fillings for pastries:

Includes the ready-to-eat products and mixes. Includes all type of fillings excluding purees (food category 04.1.2.8). These fillings usually include whole fruit or fruit pieces. Examples include: cherry pie filling and raisin filling for oatmeal cookies.

04.1.2.12 Cooked fruit:

Fruit that is steamed, boiled, baked, or fried, with or without a coating, for presentation to the consumer. Examples include: baked apples, fried apple rings, and peach dumplings (baked peaches with a sweet dough covering).

04.2 Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

Includes all fresh (food category 04.2.1) and processed (food category 04.2.2) products.

04.2.1 Fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

Fresh vegetables are generally free of additives. However, fresh vegetables that are coated or cut or peeled for presentation to the consumer may contain additives.

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[32] Proposed Codex Draft Standard for Aqueous Coconut Products (Step 5), ALINORM 00/15, Appendix II.

04.2.1.1 Untreated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes (including soybeans), and aloe vera), seaweeds, and nuts and seeds:

Raw vegetables presented fresh from harvest.

04.2.1.2 Surface-treated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

The surfaces of certain fresh vegetables are coated with glazes or waxes or are treated with other food additives that act as protective coatings and/or help to preserve the freshness and quality of the vegetable. Examples include: avocados, cucumbers, green peppers and pistachio nuts.

04.2.1.3 Peeled, cut or shredded fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

Fresh vegetables, e.g., peeled raw potatoes, that are presented to the consumer to be cooked at home (e.g., in the preparation of hash brown potatoes).

04.2.2 Processed vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

Includes all forms of processing other than peeling, cutting and surface treating fresh vegetables.

04.2.2.1 Frozen vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

Fresh vegetables are usually blanched and frozen.[33] Examples include: quick-frozen corn, quick-frozen French-fried potatoes, quick frozen peas, and quick frozen whole processed tomatoes.

04.2.2.2 Dried vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds:

Products in which the natural water content has been reduced below that critical for growth for microorganisms without affecting the important nutrients. The product may or may not be intended for rehydration prior to consumption. Includes vegetable powders that are obtained from drying the juice, such as tomato powder and beet powder.[33] Examples include: dried potato flakes and dried lentil. Examples of Oriental dried products include: dried sea tangle (kelp; *kombu*), dried sea tangle with seasoning (*shio-kombu*), dried seaweed (*tororo-kombu*), dried gourd strips (*kampyo*), dried laver (*nori*), and dried laminariales (*wakame*).

04.2.2.3 Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera) and seaweeds in vinegar, oil, brine, or soy sauce:

Products prepared by treating raw vegetables with salt solution excluding fermented soybean products. Fermented vegetables, which are a type of pickled product, are classified in food category 04.2.2.7. Fermented soybean products are classified in food category 12.10. Examples include: pickled cabbage, pickled cucumber, olives, pickled onions, mushrooms in oil, marinated artichoke hearts, achar, and picalilli. Examples of Oriental-style pickled vegetables include: *tsukemono* such as rice bran pickled vegetables (*nuka-zuke*), *koji*-pickled vegetables (*koji-zuke*), sake lees-pickled vegetables (*kasu-zuke*), *miso*-pickled vegetables (*miso-zuke*), soy sauce-pickled vegetables (*shoyu-zuke*), vinegar-pickled vegetables (*su-zuke*), and brine-pickled vegetables (*shio-zuke).* Other examples include: pickled ginger, pickled garlic, and chili pickles.

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33 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 572-576.

04.2.2.4 Canned or bottled (pasteurized) or retort pouch vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds,:

Fully preserved product in which fresh vegetables are cleaned, blanched, and placed in cans or jars in liquid (e.g., brine, water, oil or sauce), and heat-sterilized or pasteurized.[33] Examples include: canned chestnuts, canned chestnut puree, asparagus packed in glass jars, canned and cooked pink beans, canned tomato paste (low acid), and canned tomatoes (pieces, wedges or whole).

04.2.2.5 Vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed purees and spreads (e.g., peanut butter):

Vegetable purees are finely dispersed slurries prepared from the concentration of vegetables, which may have been previously heat-treated (e.g., steamed). The slurries may be filtered prior to packaging. Purees contain lower amounts of solids than pastes (found in food category 04.2.2.6).[33, 34] Examples include: tomato puree, peanut butter (a spreadable paste made from roasted and ground peanuts by the addition of peanut oil), other nut butters (e.g., cashew butter), and pumpkin butter.

04.2.2.6 Vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed pulps and preparations (e.g., vegetable desserts and sauces, candied vegetables) other than food category 04.2.2.5:

Vegetable pastes and pulps are prepared as described for vegetable purees (food category 04.2.2.5). However, pastes and pulps have a higher amount of solids, and are usually used as components of other foods (e.g., sauces). Examples include: potato pulp, horseradish pulp, aloe extract, salsa (e.g., chopped tomato, onion, peppers, spices and herbs), sweet red bean paste (*an*), sweet coffee bean paste (filling), tomato paste, tomato pulp, tomato sauce, crystallized ginger, and bean-based vegetable dessert (*namagashi*).

04.2.2.7 Fermented vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera) and seaweed products, excluding fermented soybean products of food category 12.10:

Fermented vegetables are a type of pickled product, formed by the action of lactic acid bacteria, usually in the presence of salt.[33] Traditional Oriental fermented vegetable products are prepared by air-drying vegetables and exposing them to ambient temperatures so as to allow the microorganisms to flourish; the vegetables are then sealed in an anaerobic environment and salt (to generate lactic acid), spices and seasonings are added.[35] Examples include: red pepper paste, fermented vegetable products (some *tsukemono* other than food category 04.2.2.3), *kimchi* (fermented Chinese cabbage and vegetable preparation), and sauerkraut (fermented cabbage). Excludes fermented soybean products (e.g., *natto*, soybean cheese, *miso*, and fermented soy sauce), which are found in food category 12.10.

04.2.2.8 Cooked or fried vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds:

Vegetables that are steamed, boiled, baked, or fried, with or without a coating, for presentation to the consumer. Examples include: simmered beans, pre-fried potatoes, fried okra, and vegetables boiled down in soy sauce (*tsukudani*).

05.0 Confectionery:

Includes all cocoa and chocolate products (food category 05.1), other confectionery products (food category 05.2), chewing gum (food category 05.3), and decorations and icings (food category 05.4).

05.1 Cocoa products and chocolate products including imitations and chocolate substitutes:

This category is divided to reflect the variety of standardized and non-standardized cocoa- and chocolate-based products.

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34 Codex Standard for Processed Tomato Concentrates (CXSN 057-1981).

35 *Asian Foods: Science and Technology*, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 11: Vegetable Products, S.L. Wang, Technomic Publishing Co., Lancaster PA 1999, pp. 320-323.

05.1.1 Cocoa mixes (powders) and cocoa mass/cake:

Includes a variety of products that are used in the manufacture of other chocolate products or in the preparation of cocoa-based beverages. Most cocoa products have their origin in the cocoa nib, which is obtained from cocoa beans that have been cleaned and freed from the shells. Cocoa mass is obtained from the mechanical disintegration of the nib. Depending on the desired finished chocolate product, the cocoa nib or mass may be treated by an alkalinization process that mellows the flavor. Cocoa dust is the fraction of the cocoa bean produced as a product during winnowing and degerming. Cocoa powder is produced by reducing the fat content of cocoa mass or liquor by pressing (including expeller pressing) and molding into a cocoa press cake. The cocoa press cake is disintegrated and ground to cocoa powder. Cocoa liquor is a homogeneous flowing paste produced from the cocoa nib, which has been roasted, dried, disintegrated and milled. Cocoa-sugar mixtures contain only cocoa powder and sugar. Chocolate powder for beverages is made from cocoa liquor or cocoa powder and sugar to which flavouring (e.g., vanillin) may be added.[36, 37] Examples include: drinking chocolate powder; breakfast cocoa; cocoa dust (fines), nibs, mass, press cake; chocolate liquor; cocoa mixes (powders for preparing the hot beverage); cocoa-sugar mixture; and dry mixes for sugar-cocoa confectionery. Finished cocoa beverages and chocolate milk are included in food category 01.1.2, and most finished chocolate products are included in food category 05.1.4.

05.1.2 Cocoa mixes (syrups):

Products that may be produced by adding a bacterial amylase to cocoa liquor. The enzyme prevents the syrup from thickening or setting by solubilizing and dextrinizing cocoa starch. Includes products such as chocolate syrup used to prepare chocolate milk or hot chocolate.[37] Chocolate syrup differs from fudge sauce (e.g., for ice cream sundaes), which is found in food category 05.4.

05.1.3 Cocoa-based spreads, including fillings:

Products in which cocoa is mixed with other ingredients (usually fat-based) to prepare a spreadable paste that is used as a spread for bread or as a filling for fine bakery wares. Examples include: cocoa butter,[38] fillings for bonbons and chocolates, chocolate pie filling, and nut-chocolate based spreads for bread (*Nutella*-type product).

05.1.4 Cocoa and chocolate products:

Chocolate is produced from cocoa nibs, mass, press cake, powder, or liquor with or without addition of sugar, cocoa butter, aroma or flavoring substances, and optional ingredients (e.g., nuts).[37, 39] Includes chocolate-covered nuts and fruit (e.g., raisins), but does not include yoghurt-, cereal-, and honey-covered nuts (food category 15.2). Examples include: bonbons, cocoa butter confectionery (composed of cocoa butter, milk solids and sugar),[40] white chocolate, chocolate chips (e.g., for baking), milk chocolate, cream chocolate, sweet chocolate, bitter chocolate, filled chocolate (chocolate with a texturally distinct center and external coating, excluding flour confectionery and pastry products of food categories 07.2.1 and 07.2.2), and composite chocolate (chocolate with added edible substances excluding flour starch and fat, unless expressly permitted).[41]

05.1.5 Imitation chocolate, chocolate substitute products:

Includes chocolate-like products that are not cocoa-based but have somewhat similar organoleptic properties. Examples include: carob chips.

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36 Codex Standard for Cocoa Powders (Cocoa) and Dry Mixtures of Cocoa and Sugar (CXSN 105-2001, Rev. 1); Codex Standard for Cocoa (Cacao) Mass (Cocoa/Chocolate Liquor) and Cocoa Cake (CXSN 141-2001, Rev. 1).

37 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 708-711.

38 Codex Standard for Cocoa Butter (CXSN 086-2001, Rev. 1).

39 Codex Standard for Chocolate (CXSN 087-1981).

40 Codex Standard for Cocoa Butter Confectionery (CXSN 147-1985).

41 Codex Standard for Composite and Filled Chocolate (CXSN 142-1983).

05.2 Confectionery including hard and soft candy, nougats, etc. other than food categories 05.1, 05.3, and 05.4:

Includes all types of products that primarily contain sugar and their dietetic counterparts manufactured with nutritive or non-nutritive sweeteners.Includes hard candy (food category 05.2.1), soft candy (food category 05.2.2), and nougats and marzipans (food category 05.2.3).

05.2.1 Hard candy:

Products made from water and sugar (simple syrup), colour and flavour that may or may not have a filling. Includes: pastilles and lozenges (rolled, shaped and filled sugar-based candy).[42]

05.2.2 Soft candy:

Products include soft, chewy sugar-based products such as caramels (containing sugar syrup, fats, colour and flavour); jelly-based candies (e.g., jelly beans, jellied fruit paste covered in sugar, made from sugar, gelatin, pectin, colour and flavour); and licorice.[42] Also included are Oriental specialties, such as sweet bean jelly (*yokan*) and agar jelly for *mitsumame*.

05.2.3 Nougats and marzipans:

Nougats consist of roasted ground nuts, sugar, cocoa that may be consumed as is, or may be used as a filling for chocolate products. Marzipan is a confection consisting of almond paste and sugar, that may be shaped and colored for direct consumption, or may be used as a filling for chocolate products.

05.3 Chewing gum:

Product made from natural or synthetic gum base containing flavours, sweeteners (nutritive or non-nutritive), aroma compounds, and other additives. Includes bubble gum and breath-freshener gum products.

05.4 Decorations (e.g., for fine bakery wares), toppings (non-fruit), and sweet sauces:

Includes ready-to-eat icings and frostings for cakes, cookies, pies and bread and flour confectionery, as well as mixes for these products. Also includes sugar- and chocolate-based coatings for candy, confections and baked goods, such as chocolate coatings for bonbons and nougat candy, and sugar coatings for pastilles. Sweet sauces and toppings include butterscotch sauce for use, e.g., on ice cream sundaes. These sweet sauces are different than the syrups (e.g., maple, caramel, and flavoured syrups for fine bakery wares ices) included in food category 11.4. Fruit-based toppings are included in food category 04.1.2.8. Chocolate sauce is included in food category 05.1.2.

06.0 Cereals and cereal products derived from cereal grains, roots and tubers, pulses and legumes, excluding bakery wares of food category 07.0:

Includes unprocessed (food category 06.1) and various processed forms of cereal and cereal-based products.

06.1 Whole, broken, or flaked grain, including rice:

Includes whole, husked, unprocessed cereals and grains. Examples include: barley, corn (maize), hops (for beer manufacture), oats, rice (including enriched, instant and parboiled), sorghum, soybeans, and wheat.

06.2 Flours and starches (including soybean powder):

The basic milled products of cereal grains, roots, tubers, pulses or legumes sold as such or used as ingredients (e.g., in baked goods).

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42 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 634-636.

06.2.1 Flours:

Flour is produced from the milling of grain, cereals, and tubers (e.g., cassava). Includes flour pastes for bread and flour confectionery, flour for bread, pastries, noodles and pasta, and flour mixes (physical mixtures of flours from different cereal or grain sources, which are different from mixes for bakery goods (dry mixes containing flour and other ingredients, food categories 07.1.6 (mixes for ordinary bakery wares) and 07.2.3 (mixes for fine bakery wares). Examples include: durum wheat flour, self-rising flour, enriched flour, instantized flour, corn flour, corn meal, bran, farina, roasted soybean flour (*kinako*), konjac flour (devil's tongue jelly powder, *konnayaku-ko*), and *maida* (refined wheat flour).

06.2.2 Starches:

Starch is a glucose polymer occurring in granular form in certain plant species, notably seeds (e.g., cereals, pulses, corn, wheat, rice, beans, peas) and tubers (e.g., tapioca, potato). The polymer consists of linked anhydro-alpha-D-glucose units. Native starch is separated by processes that are specific for each raw material.

06.3 Breakfast cereals, including rolled oats:

Includes all ready-to-eat, instant, and regular hot breakfast cereal products. Examples include: granola-type breakfast cereals, instant oatmeal, farina, corn flakes, puffed wheat or rice, multi-grain (e.g., rice, wheat and corn) breakfast cereals, breakfast cereals made from soy or bran, and extruded-type breakfast cereals made from grain flour or powder.

06.4 Pastas and noodles and like products (e.g., rice paper, rice vermicelli, soybean pastas and noodles):

The 34th CCFAC revised this category as follows, with the understanding that there would be few, if any additives needed in dried pastas and noodles.[43]

06.4.1 Fresh pastas and noodles and like products:

Products that are untreated (i.e., not heated, boiled, steamed, cooked, pre-gelatinized or frozen) and are not dehydrated. These products are intended to be consumed soon after preparation. Examples include: unboiled noodles, and "skins" or crusts for spring rolls, wontons, and *shuo mai*.

06.4.2 Dried pastas and noodles and like products:

Products that are untreated (i.e., not heated, boiled, steamed, cooked, pre-gelatinized or frozen) and are dehydrated. Examples include dried forms of: spaghetti, bean vermicelli, rice vermicelli, macaroni, and rice noodles.

06.4.3 Pre-cooked pastas and noodles and like products:

Products that are treated (i.e., heated, boiled, steamed, cooked, pre-gelatinized or frozen). These products may be sold directly to the consumer (e.g., pre-cooked, chilled gnocchi to be heated prior to consumption), or may be the starch component of prepared meals (e.g., heat-and-serve frozen dinner entrees containing spaghetti, macaroni or noodles; canned spaghetti and meatballs entrée). Also includes instant noodles (*sokuseki-men*; e.g., pre-cooked ramen, udon, rice noodles), that are pre-gelatinized , heated and dried prior to sale to the consumer.

06.5 Cereal and starch based desserts (e.g., rice pudding, tapioca pudding):

Dessert products containing cereal, starch or grain as the main ingredient. Also includes cereal- or starch based fillings for desserts. Examples include: rice pudding, semolina pudding, tapioca pudding, rice flour dumplings (*dango*), a steamed yeast-fermented wheat flour dough dessert (*musipan*), and a starchy pudding based dessert (*namagashi*).

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[43] ALINORM 03/12, para. 55.

06.6 Batters (e.g., for breading or batters for fish or poultry):

Products containing flaked or ground cereal or grain that when combined with other ingredients (e.g., egg, water, milk) are used as a coating for fish or poultry. Products are usually sold as dry mix of the cereal or grain component. Examples include breading for *tempura* batter. Doughs (e.g., for bread) are found in food category 07.1.4, and other mixes (e.g., for bread or cakes) are found in food categories 07.1.6 and 07.2.3, respectively.

06.7 Rice cakes (Oriental type only):

Products prepared from rice that is soaked, drained, steamed, kneaded and shaped into cake forms (e.g., Japanese *mochi*, Korean *teuck*).[44] Crisp snacks made from rice grains, also called "rice cakes" are categorized in 15.1, and dessert-type rice cakes are in food category 06.5. Food category 06.7 would also include processed rice and enriched rice products, such as pre-cooked products that are sold canned, chilled or frozen; and processed rice products sold in retort pouches. This is to distinguish from food category 06.1 (Whole, broken, or flaked grain, including rice) that is intended to include only whole, husked, unprocessed cereals and grains.

06.8 Soybean products (excluding soybean products of food category 12.9 and fermented soybean products of food category 12.10):

Includes frozen and dried soybeans, cooked or fried soybeans, etc.

07.0 Bakery wares:

Includes categories for bread and ordinary bakery wares (food category 07.1) and for sweet, salty and savoury fine bakery wares (food category 07.2).

07.1 Bread and ordinary bakery wares and mixes:

Includes all types of non-sweet bakery products and bread-derived products.

07.1.1 Breads and rolls:

Includes yeast-leavened and specialty breads and soda bread.

07.1.1.1 Yeast-leavened breads and specialty breads:

Includes all types of non-sweet bakery products and bread-derived products. Examples include: white bread, rye bread, pumpernickel bread, raisin bread, whole wheat bread, pain courant francais, malt bread, hamburger rolls, whole wheat rolls, and milk rolls.

07.1.1.2 Soda breads:

Includes soda breads.

07.1.2 Crackers, excluding sweet crackers:

The term "cracker" refers to a thin, crisp wafer, usually of unsweetened dough. Flavoured crackers (e.g., cheese flavoured) that are consumed as snacks are in food category 15.1. Examples include: soda crackers, rye crisps, and matzohs.

07.1.3 Other ordinary bakery products (e.g., bagels, pita, English muffins):

Includes all other ordinary bakery wares, such as cornbread and biscuits. The term "biscuit" in this category refers to a small cake of shortened bread, leavened with baking powder or baking soda. It does not refer to the British "biscuit," which is a "cookie" or "sweet cracker" included in food category 07.2.1.

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[44] *Asian Foods: Science and Technology*, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 1: Rice Products, B.S. Luh, Technomic Publishing Co., Lancaster PA 1999, p. 16.

07.1.4 Bread-type products, including bread stuffing and bread crumbs:

Includes bread-based products such as croutons, bread stuffing and stuffing mixes, and prepared doughs (e.g., for biscuits). Bread mixes are included in food category 07.1.6.

07.1.5 Steamed breads and buns:

Oriental-style leavened wheat or rice products that are cooked in a steamer. Products may be made with or without filling. In China, products without filling are called steamed bread (*mantou*), and those with filling are called steamed buns (*baozi* or *bao*). Twisted rolls of various shapes (*huajuan*) may also be prepared.[45] Examples include: filled dumplings and steamed bun with meat, jam or other filling (*manjyu*).

07.1.6 Mixes for bread and ordinary bakery wares:

Includes all the mixes containing the dry ingredients to which wet ingredients (e.g., water, milk, oil, butter, eggs) are added to prepare a dough for baked goods from food categories 07.1.1 to 07.1.5. Examples include: French bread mix, tin bread mix, pannetone mix, ciabatta mix, among others. Mixes for fine bakery wares (e.g., cakes, cookies, pancakes) are found in food category 07.2.3.

07.2 Fine bakery wares (sweet, salty, savoury) and mixes:

Includes sub-categories for ready-to-eat products (food categories 07.2.1 and 07.2.2) as well as mixes (food category 07.2.3) for preparing fine baked goods.

07.2.1 Cakes, cookies and pies (e.g., fruit-filled or custard types):

The term “sweet cracker” or “sweet biscuit” used in this category refers to a cookie-like product that may be eaten as a dessert. Examples include: butter cake, cheesecake, fruit-filled cereal bars, pound cake (including *kasutera*), moist cake (type of starchy dessert (*namagashi*)), western cakes, moon cakes, sponge cake, fruit-filled pies (e.g., apple pie), oatmeal cookies, sugar cookies and British “biscuits” (cookies or sweet crackers).

07.2.2 Other fine bakery products (e.g., doughnuts, sweet rolls, scones, and muffins):

Includes products that may be eaten as a dessert or as breakfast. Examples include: pancakes, waffles, filled sweet buns (*anpan*), Danish pastry, wafers or cones for ice cream, flour confectionery, and trifles.

07.2.3 Mixes for fine bakery wares (e.g., cakes, pancakes):

Mixes containing the dry ingredients to which wet ingredients (e.g., water, milk, oil, butter, eggs) are added to prepare dough for fine baked goods. Examples include: cake mix, flour confectionery mix, pancake mix, pie mix, and waffle mix. Prepared dough is found in food category 07.1.4. Mixes for ordinary bakery wares (e.g., bread) is found in food category 07.1.6.

08.0 Meat and meat products, including poultry and game:

This category includes all types of meat, poultry, and game products, in pieces and cuts or comminuted, fresh (food category 08.1) and processed (food categories 08.2 and 08.3).

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45 *Asian Foods: Science and Technology*, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 4: Wheat Products: 2. Breads, Cakes, Cookies, Pastries, and Dumplings, S. Huang, Technomic Publishing Co., Lancaster PA 1999, pp. 72-73.

08.1 Fresh meat, poultry and game:

Fresh products are usually free of additives. However, in certain circumstances, additives are necessary. For example, colours are used for certification stamps on the surfaces of fresh cuts of meat, and are indicated in the FCS with a notation for "stamping, marking or branding the product." Additionally, coatings, such as glazes and spice rubs, may be applied to meat products prior to marketing to the consumer (e.g., glazed ham, and barbecued chicken). In the FCS, this is indicated with a notation for "use as a glaze or coating (surface treatment)." It should be noted that the coatings marketed *per se* are included in food categories 04.1.2.8 (fruit-based glazes, e.g., for ham) and 12.2 (spice rubs).

08.1.1 Fresh meat, poultry and game, whole pieces or cuts:

Untreated raw meat, poultry and game carcasses and cuts. Examples include: beef, hog and pork carcasses; fresh beef blood; fresh whole chickens and chicken parts; fresh beef cuts (e.g., steaks); beef organs (e.g., heart, kidney); fresh tripe; and pork chops.

08.1.2 Fresh meat, poultry and game, comminuted:

Untreated raw comminuted or mechanically deboned meat, poultry and game. Examples include: fresh beef (hamburger) patties; boerewors; fresh breakfast sausages; gehakt (chopped meat); loganiza (fresh, uncured sausage); fresh meatballs; mechanically deboned, ground and formed poultry pieces (with or without breading or coating); and fresh sausages (e.g., beef, Italian, and pork).

08.2 Processed meat, poultry, and game products in whole pieces or cuts:

Includes various treatments for non-heat treated meat cuts (food category 08.2.1) and heat-treated meat cuts (food category 08.3.2).

08.2.1 Non-heat treated processed meat, poultry and game products in whole pieces or cuts:

This category describes several treatment methods (e.g., curing, salting, drying, pickling) that preserve and extend the shelf life of meats.

08.2.1.1 Cured (including salted) non-heat treated processed meat, poultry, and game products in whole pieces or cuts:

Salted products are treated with sodium chloride. Dry cured (dry pickled) products are prepared by rubbing salt directly on the meat surface. Wet pickle cured products are prepared by submerging the meat in a brine solution. Pump cured products are prepared by injecting brine into the meat. Curing may also be achieved by addition of additives. Smoked products are also included here.[46] Examples include: bacon (cured, dry-cured, immersion-cured, pump-cured); side bacon; corned beef; marinaded beef; and different types of Oriental pickled products: miso-pickled meat (*miso-zuke*), *koji*-pickled meat (*koji-zuke*), and soy sauce-pickled meat (*shoyu-zuke*).

08.2.1.2 Cured (including salted) and dried non-heat treated processed meat, poultry, and game products in whole pieces or cuts:

The meat cuts may be cured or salted as described for food category 08.2.1.1, and then dried, or they may only be dried. Drying is achieved either in hot air or in vacuum. Examples include: dried salt pork, dehydrated meat, stuffed loin, Iberian ham, and proscuitto-type ham.

08.2.1.3 Fermented non-heat treated processed meat, poultry, and game products in whole pieces or cuts:

Fermented products are a type of pickled product produced by the action of lactic acid bacteria in the presence of salt. Examples include: potted beef and pickled (fermented) pig's feet.

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[46] *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 439-445.

08.2.2 Heat-treated processec meat, poultry, and game products in whole pieces or cuts:

Includes cooked (including cured and cooked, and dried and cooked), heat-treated (including sterilized) and canned meat cuts. Examples include: cured, cooked ham; cured, cooked pork shoulder; canned chicken meat; and meat pieces boiled in soy sauce (*tsukudani*).

08.2.3 Frozen processed meat, poultry, and game products in whole piees or cuts:

Includes raw and cooked meat cuts that have been frozen. Examples include: frozen whole chickens, frozen chicken parts, and frozen beef steaks.

08.3 Processed comminuted meat, poultry, and game products:

Includes various treatments for non-heat treated products (food category 08.3.1) and heat-treated products (food category 08.3.2).

08.3.1 Non-heat treated processed comminuted meat, poultry, and game products:

This category describes several treatment methods (e.g., curing, salting, drying, pickling) that preserve and extend the shelf life of comminuted and mechanically deboned meat products.

08.3.1.1 Cured (including salted) non-heat treated processed comminuted meat, poultry, and game products:

Salted products are treated with sodium chloride. Dry cured (dry pickled) products are prepared by rubbing salt directly on the meat surface. Wet pickle cured products are prepared by submerging the meat in a brine solution. Pump cured products are prepared by injecting brine into the meat. Curing may also be achieved by addition of additives. Also includes smoked products.[46] Examples include: chorizos (spicy pork sausages), salami-type products, salchichon, tocino (fresh, cured sausage), pepperoni, and smoked sausage.

08.3.1.2 Cured (including salted) and dried non-heat treated processed comminuted meat, poultry, and game products:

The comminuted or mechanically deboned products may be cured or salted as described for food category 08.3.1.1, and then dried, or they may only be dried. Drying is achieved either in hot air or in vacuum.[46] Examples include: pasturmas, dried sausages, cured and dried sausages, beef jerky, Chinese sausages (including traditional cured or smoked pork sausage), and sobrasada.

08.3.1.3 Fermented non-heat treated processed comminuted meat, poultry, and game products:

Fermented products are a type of pickled product produced by the action of lactic acid bacteria in the presence of salt. Certain types of sausages may be fermented.

08.3.2 Heat-treated processed comminuted meat, poultry, and game products:

Includes cooked (including cured and cooked, and dried and cooked), heat-treated (including sterilized) and canned comminuted products. Examples include: pre-grilled beef patties; foie gras and pates; brawn and head cheese; cooked, cured chopped meat; chopped meat boiled in soy sauce (*tsukudani*); canned corned beef; luncheon meats; meat pastes; cooked meat patties; cooked salami-type products; cooked meatballs; saucises de strasbourg; breakfast sausages; brown-and-serve sausages; and terrines (a cooked chopped meat mixture).

08.3.3 Frozen processed comminuted meat, poultry, and game products:

Includes raw, partially cooked and fully cooked comminuted or mechanically deboned meat products that have been frozen. Examples include: frozen hamburger patties; frozen breaded or battered chicken fingers.

08.4 Edible casings (e.g., sausage casings):

Casings or tubing prepared from collagen, cellulose, or food-grade synthetic material or from natural sources (e.g., hog or sheep intestines) that contain the sausage mix.

09.0 Fish and fish products, including molluscs, crustaceans, and echinoderms:

This broad category is divided into categories for fresh fish (food category 09.1) and various processed fish products (food categories 09.2 – 09.4). This category includes aquatic vertebrates (fish and aquatic mammals (e.g., whales)), aquatic invertebrates (e.g., jellyfish), as well as molluscs (e.g., clams, snails), crustaceans (e.g., shrimp, crab, lobster), and echinoderms (e.g., sea urchins, sea cucmbers). Fish products may be treated with coatings, such as glazes and spice rubs, prior to marketing to the consumer (e.g., glazed frozen fish fillets). In the FCS, this is indicated with a notation for "use as a glaze or coating (surface treatment)."

09.1 Fresh fish and fish products, including molluscs, crustaceans, and echinoderms:

The term "fresh" refers to fish and fish products that are untreated except for refrigeration, storage on ice, or freezing upon catching at sea or in lakes or other bodies of water in order to prevent decomposition and spoilage.[47]

09.1.1 Fresh fish:

Includes fresh whale meat, cod, salmon, trout, etc.; and fresh fish roe.

09.1.2 Fresh molluscs, crustaceans and echinoderms:

Includes fresh shrimp, clams, crabs, lobster, snails, etc.

09.2 Processed fish and fish products, including molluscs, crustaceans, and echinoderms:

This category refers to fish products that are frozen and may require further cooking, as well as ready-to-eat cooked, smoked, dried, fermented, and salted products.

09.2.1 Frozen fish, fish fillets, and fish products, including molluscs, crustaceans, and echinoderms:

Fresh, including partially cooked, fish subjected to freezing or quick-freezing at sea and on land for further processing. Examples include: frozen or deep frozen clams, cod fillets, crab, finfish, haddock, hake, lobster, minced fish, prawns and shrimp; frozen fish roe; frozen surimi; and frozen whale meat.

09.2.2 Frozen battered fish, fish fillets and fish products, including molluscs, crustaceans, and echinoderms:

Uncooked product prepared from fish or fish portions, with dressing in eggs and bread crumbs or batter. Examples include: frozen raw breaded or batter-coated shrimp; and frozen or quick-frozen breaded or batter-coated fish fillets, fish portions and fish sticks (fish fingers).[48]

09.2.3 Frozen minced and creamed fish products, including molluscs, crustaceans, and echinoderms:

Uncooked product prepared from minced fish pieces in cream-type sauce.

09.2.4 Cooked and/or fried fish and fish products, including molluscs, crustaceans, and echinoderms:

Includes all ready-to-eat cooked products as described in the sub-categories.

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47 Ibid., pp. 464-468.

48 Codex Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded and in Batter (CXSN 166-1995, Rev. 1).

09.2.4.1 Cooked fish and fish products:

Cooked products include steamed, boiled or any other cooking method except frying (see food categories 09.2.4.3). The fish may be whole, in portions or comminuted. Examples include: fish sausage; cooked fish products boiled down in soy sauce (*tsukudani*); cooked surimi product (*kamaboko*); crab-flavoured cooked *kamaboko* product (*kanikama*); cooked fish roe; cooked surimi; cooked, tube-shaped surimi product (*chikuwa*); and cooked fish and lobster paste (surimi-like products. Other fish paste (Oriental type) is found in food category 09.3.4.

09.2.4.2 Cooked molluscs, crustaceans, and echinoderms:

Cooked products include steamed, boiled or any other cooking method except frying (see food category 09.2.4.3). Examples include: cooked *crangon crangon* and *crangon vulgaris* (brown shrimp; cooked shrimp, clams and crabs.

09.2.4.3 Fried fish and fish products, including molluscs, crustaceans, and echinoderms:

Ready-to-eat products prepared from fish or fish portions, with or without further dressing in eggs and bread crumbs or batter, that are fried, baked, roasted or barbecued, and then packaged or canned with or without sauce or oil. Examples include: ready-to-eat fried surimi, fried calamari, and fried soft-shell crabs.

09.2.5 Smoked, dried, fermented, and/or salted fish and fish products, including molluscs, crustaceans, and echinoderms:

Smoked fish are usually prepared from fresh deep frozen or frozen fish that are dried directly or after boiling, with or without salting, by exposing the fish to freshly-generated sawdust smoke. Dried fish are prepared by exposing the fish to sunlight or drying directly or after boiling in a special installation; the fish may be salted prior to drying. Salted fish are either rubbed with salt or placed in a salt solution. This manufacturing process is different from that described in food category 09.3 for marinated and pickled fish. Cured fish is prepared by salting and then smoking fish. Examples include: salted anchovies, shrimp, and shad; smoked chub, cuttlefish and octopus; fish ham; dried and salted species of the *Gadidae* species; smoked or salted fish paste and fish roe; cured and smoked sablefish, shad, and salmon; dried shellfish, dried bonito (*katsuobushi*), and boiled, dried fish (*niboshi*).

09.3 Semi-preserved fish and fish products, including molluscs, crustaceans, and echinoderms:

Includes products treated by methods such as marinating, pickling and partial cooking that have a limited shelf life.

09.3.1 Fish and fish products, including molluscs, crustaceans, and echinoderms, marinated and/or in jelly:

Marinated products are manufactured by soaking the fish in vinegar or wine with or without added salt and spices. They are packaged in jars or cans and have a limited shelf life. Products in jelly may be manufactured by tenderizing fish products by cooking or steaming, adding vinegar or wine, salt and preservatives, and solidifying in a jelly. Examples include: “rollmops” (a type of marinated herring), sea eel (dogfish) in jelly and fish aspic.

09.3.2 Fish and fish products, including molluscs, crustaceans, and echinoderms, pickled and/or in brine:

Pickled products are sometimes considered a type of marinaded product. Pickling results from the treatment of the fish with a salt and vinegar or alcohol (e.g., wine) solution. Examples include: different types of Oriental pickled products: *koji*-pickled fish (*koji-zuke*), lees-pickled fish (*kasu-zuke*), *miso*-pickled fish (*miso-zuke*), soy sauce-pickled fish (*shoyu-zuke*), and vinegar-pickled fish (*su-zuke*); pickled whale meat; and pickled herring and sprat.

09.3.3 Salmon substitutes, caviar, and other fish roe products:

Roe is usually produced by washing, salting and allowing to ripen until transparent. The roe is then packaged in glass or other suitable containers. The term "caviar" refers only to the roe of the sturgeon species (e.g., beluga). Caviar substitues are made of roe of various sea and freshwater fish (e.g., cod and herring) that are salted, spiced, dyed and may be treated with a preservative.[47] Examples include: salted salmon roe (*sujiko*), processed, salted salmon roe (*ikura*), cod roe, salted cod roe (*tarako*) and lumpfish caviar. Occasionally, roe may be pasteurized. In this case, it is included in food category 09.4, since it is a fully preserved product. Roe products that are frozen, cooked or smoked are included in food categories 09.2.1, 09.2.4.1, and 09.2.5, respectively; fresh fish roe is found in food category 09.1.1.

09.3.4 Semi-preserved fish and fish products, including molluscs, crustaceans, and echinoderms (e.g., fish paste), excluding products of food categories 09.3.1 – 0.9.3.3:

Examples include fish or crustacean pates and traditional Oriental fish paste. The latter is produced from fresh fish or the residue from fish sauce production, which is combined with other ingredients such as wheat flour, bran, rice or soybeans. The product may be further fermented.[49] Cooked fish or crustacean pastes (surimi-like products) are found in food categories 09.2.4.1 and 09.2.4.2, respectively.

09.4 Fully preserved, including canned or fermented fish and fish products, including molluscs, crustaceans, and echinoderms:

Products with extended shelf life, manufactured by pasteurizing or steam retorting and packaging in vacuum-sealed air-tight containers to ensure sterility. Products may be packed in their own juice or in added oil or sauce.[47] This category excludes fully cooked products (see food category 09.2.4). Examples include: canned tuna, clams, crab, fish roe and sardines; gefilte fish balls; and surimi (heat-pasteurized).

10.0 Eggs and egg products:

Includes fresh in-shell eggs (food category 10.1), products that may substitute for fresh eggs (food category 10.2) and other egg products (food categories 10.3 and 10.4).

10.1 Fresh eggs:

Fresh in-shell eggs are not expected to contain additives. However, colours may be used for decorating, dyeing or stamping the exterior surfaces of shell eggs. In the FCS, a notation for "for decoration, stamping, marking or branding the product (surface treatment) accommodates this.

10.2 Egg products:

Products that may be used as replacement for fresh eggs in recipes or as a food (e.g., omelet). They are produced from fresh eggs by either (i) mixing and purifying the whole egg; or (ii) separating the egg white and yolk, and then mixing and purifying each separately. The purified whole egg, white or yolk is then further processed to produce liquid, frozen or dried eggs as described below.[50]

10.2.1 Liquid egg products:

The purified whole egg, egg yolk or egg white is pasteurized and chemically preserved (e.g., by addition of salt).

10.2.2 Frozen egg products:

The purified whole egg, egg yolk or egg white is pasteurized and frozen.

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49 *Asian Foods: Science and Technology*, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 9: Traditional Oriental Seafood Products, Y.-W. Huang & C.-Y Huang, Technomic Publishing Co., Lancaster PA 1999, p. 264.

50 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 411-414.

10.2.3 Dried and/or heat coagulated egg products:

Sugars are removed from the purified whole egg, egg yolk or egg white, which is then pasteurized and dried.

10.3 Preserved eggs, including alkaline, salted, and canned eggs:

Includes traditional Oriental preserved products, such as salt-cured duck eggs (*Hueidan*), and alkaline treated "thousand-year-old-eggs" (*pidan*).[51]

10.4 Egg-based desserts (e.g., custard):

Includes ready-to-eat products and products to be prepared from a dry mix. Examples include: flan and egg custard. Also includes custard fillings for fine bakery wares (e.g., pies).

11.0 Sweeteners, including honey:

Includes all standardized sugars (food category 11.1), non-standardized products (e.g., food categories 11.2, 11.3, 11.4 and 11.6), and natural sweeteners (food category 11.5 – honey).

11.1 Refined and raw sugars:

Nutritive sweeteners, such as fully or partially purified sucrose (derived from sugar beet and sugar cane), glucose (derived from starch), or fructose, that are included in sub-categories 11.1.1 to 11.1.5.

11.1.1 White sugar, dextrose anhydrous, dextrose monohydrate, fructose:

White sugar is purified and crystallized sucrose with a polarisation of not less than 99.7°Z. Dextrose anhydrous is purified and crystallized D-glucose without water of crystallization. Dextrose monohydrate is purified and crystallized D-glucose with one molecule of water of crystallization. Fructose is purified and crystallized D-fructose.[52]

11.1.2 Powdered sugar, powdered dextrose:

Powdered sugar (icing sugar) is finely pulverized white sugar with or without added anticaking agents. Powdered dextrose (icing dextrose) is finely pulverized dextrose anhydrous or dextrose monohydrate, or a mixture of the two, with or without added anticaking agents.

11.1.3 Soft white sugar, soft brown sugar, glucose syrup, dried glucose syrup, raw cane sugar:

Soft white sugar is fine grain purified, moist sugar, that is white in color. Soft brown sugar is fine grain moist sugar that is light to dark brown in color. Glucose syrup is a purified concentrated aqueous solution of nutritive saccharides derived from starch and/or inulin.[53] Dried glucose syrup is glucose syrup from which water has been partially removed. Raw cane sugar is partially purified sucrose crystallized from partially purified cane juice without further purification.

11.1.3.1 Dried glucose syrup used to manufacture sugar confectionery:

Dried glucose syrup, as described in food category 11.1.3, used to manufacture candy products that are included in food category 05.2 (e.g., hard or soft candies).

11.1.3.2 Glucose syrup used to manufacture sugar confectionery:

Glucose syrup, as described in food category 11.1.3, used to manufacture candy products that are included in food category 05.2 (e.g., hard or soft candies).

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51 *Asian Foods: Science and Technology*, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 8: Traditional Poultry and Egg Products, T.C. Chen, Technomic Publishing Co., Lancaster PA 1999, pp. 240-244.

52 Codex Standard for Sugars (CXSN 212-2001, Rev. 1).

53 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 631-633.

11.1.4 Lactose:

A natural constituent of milk normally obtained from whey. It may be anhydrous, or contain one molecule of water of crystallization, or be a mixture of both forms.[52]

11.1.5 Plantation or mill white sugar:

Purified and crystallized sucrose with a polarisation of not less than 99.5°Z.[52]

11.2 Brown sugar excluding products of food category 11.1.3:

Includes large-grain, brown or yellow lump sugars, such as Demerara sugar.

11.3 Sugar solutions and syrups, also (partially) inverted, including treacle and molasses, excluding products of food category 11.1.3:

Includes co-products of the sugar refining process (e.g., treacle and molasses), invert sugar (equimolar mixture of glucose and fructose produced from the hydrolysis of sucrose), and other sweeteners, such as high fructose corn syurp, high fructose inulin syrup and corn sugar.

11.4 Other sugars and syrups (e.g., xylose, maple syrup, sugar toppings):

Includes all types of table syrups (e.g., maple syrup), syrups for fine bakery wares and ices (e.g., caramel syrup, flavoured syrups), palm sugar, and decorative sugar toppings (e.g., coloured sugar crystals for cookies).

11.5 Honey:

Honey is the natural sweet substance produced by honeybees from the nectar of blossoms or secretions of plants. The honeybees collect the nectar or secretions, transform it by combination with specific substances of the bees' own, and store it in a honeycomb to ripen and mature.[54] Examples of honey include wildflower honey and clover honey.

11.6 Table-top sweeteners, including those containing high-intensity sweeteners:

Includes products that are preparations of high-intensity sweeteners (e.g., acesulfame potassium) and/or of polyols (e.g., sorbitol) which may contain other additives and/or nutritive ingredients, such as carbohydrates. These products, which are sold to the final consumer, may be in powder, solid (e.g., tablets or cubes), or liquid form.

12.0 Salts, spices, soups, sauces, salads, protein products (including soybean protein products) and fermented soybean products:

This is a broad category that includes substances added to food to enhance its aroma and taste (food categories 12.1 – salt and salt substitutes; 12.2 – spices; 12.3 – vinegars; and 12.4 - mustards), certain prepared foods (food categories 12.5 – soups; 12.6 – sauces; and 12.7 – salads), products composed primarily of protein that are derived from soybeans or from other sources (e.g., milk, cereal, or vegetables) (food category 12.9 - protein products), and fermented soybean products that are used as condiments (food category 12.10 – fermented soybean products).

12.1 Salt and salt substitutes:

Includes salt (food category 12.1.1) and salt substitutes (food category 12.1.2) used as seasoning for food.

12.1.1 Salt:

Primarily food-grade sodium chloride. Includes table salt, iodized and fluoride iodized salt, and dendritic salt.

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54 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 636. Codex Standard for Honey (CXSN 012-2001, Rev. 2).

12.1.2 Salt substitutes

Salt substitutes are seasonings with reduced sodium content intended to be used on food in place of salt.

12.2 Herbs, spices, seasonings, and condiments (e.g., seasoning for instant noodles):

12.2.1 Herbs and spices

This category describes items whose use is intended to enhance the aroma and taste of food. Herbs and spices are usually derived from botanical sources, and may be dehydrated, and either ground or whole. Examples of herbs include basil, oregano and thyme. Examples of spices include cumin and caraway seeds. Spices may also be found as blends in powder or paste form. Examples of spice blends include chili seasoning, chili paste, curry paste, curry roux, and dry cures or rubs that are applied to external surfaces of meat or fish.

12.2.2 Seasonings and condiments

Condiments include seasonings such as meat tenderizers, onion salt, garlic salt, Oriental seasoning mix (*dashi*), topping to sprinkle on rice (*furikake*, containing, e.g., dried seaweed flakes, sesame seeds and seasoning), and seasoning for noodles. The term "condiments" as used in the FCS does not include condiment sauces (e.g., ketchup, mayonnaise, mustard) or relishes.

12.3 Vinegars:

Liquid produced from acetous fermentation of ethanol from a suitable source (e.g., wine, cider). Examples include, cider vinegar, wine vinegar, malt vinegar, spirit vinegar, grain vinegar, raisin vinegar, and fruit (wine) vinegar.[55]

12.4 Mustards:

Condiment sauce prepared from ground, often defatted mustard seed that is mixed into a slurry with water, vinegar, salt, oil and other spices and refined. Examples include Dijon mustard, and "hot" mustard (prepared from seeds with hulls).[56]

12.5 Soups and broths:

Includes ready-to-eat soups and mixes. The finished products may be water- (e.g., consommé) or milk-based (e.g., chowder).

12.5.1 Ready-to-eat soups and broths, including canned, bottled, and frozen:

Water- or milk-based products consisting of vegetable, meat or fish broth with or without other ingredients (e.g., vegetables, meat, noodles). Examples include: bouillon, broths, consommés, water- and cream-based soups, chowders, and bisques.

12.5.2 Mixes for soups and broths:

Concentrated soup to be reconstituted with water and/or milk, with or without addition of other optional ingredients (e.g., vegetables, meat, noodles). Examples include: bouillon powders and cubes; powdered and condensed soups (e.g., *mentsuyu*); and stock cubes and powders.

12.6 Sauces and like products:

Includes ready-to-eat sauces, gravies and dressings, and mixes to be reconstituted before consumption. The ready-to eat products are divided into sub-categories for emulsified (food category 12.6.1) and non-emulsified (food category 12.6.2) products, whereas the sub-category for the mixes (food category 12.6.3) encompasses both emulsified and non-emulsified sauce mixes.

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55 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 719-720.

56 Ibid., p. 718.

12.6.1 Emulsified sauces (e.g., mayonnaise, salad dressing):

Sauces, gravies and dressings based, at least in part, on a fat- or oil-in water emulsion. Examples include: salad dressing (e.g., French, Italian, Greek, ranch style), fat-based sandwich spreads (e.g., mayonnaise with mustard), salad cream, and fatty sauces.

12.6.2 Non-emulsified sauces (e.g., ketchup, cheese sauce, cream sauce, brown gravy):

Include water-, coconut milk-, and milk-based sauces, gravies and dressings. Examples include: barbecue sauce, tomato ketchup, cheese sauce, Worcestershire sauce, Oriental thick Worcestershire sauce (*tonkatsu sauce*), chili sauce, sweet and sour dipping sauce, and white (cream-based) sauce (sauce consisting primarily of milk or cream, with little added fat (e.g., butter) and flour, with or without seasoning or spices).

12.6.3 Mixes for sauces and gravies:

Concentrated product, usually in powdered form, to be mixed with water, milk, oil or other liquid to prepare a finished sauce or gravy. Examples include mixes for cheese sauce, hollandaise sauce, and salad dressing (e.g., Italian or ranch dressing).

12.6.4 Clear sauces (e.g., fish sauce):

Includes thin, non-emulsified clear sauces that may be water-based. These sauces may be used as condiments or ingredients rather than as finished gravy (for use e.g., on roast beef). Examples include: oyster sauce, and Thai fish sauce (*nam pla*).

12.7 Salads (e.g., macaroni salad, potato salad) and sandwich spreads excluding cocoa- and nut-based spreads of food categories 04.2.2.5 and 05.1.3:

Includes prepared salads, milk-based sandwich spreads, non-standardized mayonnaise-like sandwich spreads, and dressing for coleslaw (cabbage salad).

12.8 Yeast and like products:

Includes baker's yeast and leaven used in the manufacture of baked goods. Includes the Oriental products *koji* (rice or wheat malted with *A. oryzae*) used in the production of alcoholic beverages.

12.9 Protein products:

Includes products mainly composed of soy protein (food category 12.9.1), bean curd products (food categories 12.9.2, 12.9.3 and 12.9.4) and products derived from other protein sources (e.g., milk, cereal or vegetable) (food category 12.9.5).

12.9.1 Soybean protein products:

Products mainly composed of soy protein, excluding non-fermented soybean products of food categories 12.9.2 – 12.9.4, but including non-fermented soy sauce (food category 12.9.1.3).

12.9.1.1 Soybean beverage:

Product prepared from dried soybeans that are soaked in water, pureed, diluted with water, boiled and strained. Soybean beverage may be consumed as is, or used to prepare other soybean products, such as those in food categories 12.9.2 (Fresh soybean curd (tofu)) and 12.9.1.2 (Soybean beverage film).[57, 58, 59]

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57 The Joy of Japanese Cooking, K. Takahashi, Shufunomoto Col., Ltd., Japan, 1996, pp. 17-18 and 123-131.
58 Taste of Japan, D. Richie, Kodansha International, Tokyo, Japan, 1992, pp, 34-35.
59 Ibid., pp.141-153.

12.9.1.2 Soybean beverage film:

Film formed on the surface of boiling soy beverage that is dried. It may be deep-fried or softened in water prior to use in soups or poached food. Also known as *fuzhu* or *yuba*.[60, 61, 62]

12.9.1.3 Other soybean protein products (including non-fermented soy sauce):

Other products composed mainly of soy protein, such as soy beverage powder, which is sold as is, for reconstitution, or as a mix containing a coagulant that can be reconstituted by the consumer for preparing home-made soft tofu.[57, 61] Also includes non-fermented soy sauce, which is also known as non-brewed soy sauce. This product may be produced from vegetable proteins, such as defatted soybeans, that are acid-hydrolyzed (e.g., with hydrochloric acid), neutralized (e.g., with sodium carbonate), and filtered.[63, 64]

12.9.2 Fresh bean curd (tofu):

Fresh tofu is prepared from dried soybeans that are soaked in water, pureed, diluted and strained to produce soymilk, which is then made into a curd with a coagualant, separated from the whey, placed in a mold, and lightly pressed. When the tofu is set, it is immersed in water and cut. Tofu may be of a variety of textures (e.g., soft, semi-firm, firm).[57, 58]

12.9.3 Semi-dehydrated bean curd:

Tofu that has been pressed while being molded into blocks so that some moisture has been removed, but so that it is not completely dried (see food category 12.9.4). Semi-dehydrated tofu typically contains 62% water, and has a chewy texture.

12.9.3.1 Thick gravy-stewed semi-dehydrated bean curd:

Partially dehydrated tofu that is cooked (stewed) with a thick sauce (e.g., miso sauce). The partially dehydrated tofu typically absorbs the sauce, and so regains its original texture[57].

12.9.3.2 Deep fried semi-dehydrated bean curd:

Partially dehydrated tofu that is deep-fried. It may be consumed as such, or cooked (e.g., stewed in sauce) after frying.[57, 65]

12.9.3.3 Semi-dehydrated bean curd, other than food categories 12.9.3.1 and 12.9.3.2:

Partially dehydrated tofu prepared other than by stewing in thick (e.g., miso) sauce or by deep-frying. Includes grilled products and mashed products that may be combined with other ingredients (e.g., to make a patty or a loaf).[57]

12.9.4 Dehydrated bean curd (kori tofu):

Tofu from which all moisture has been removed. It may be reconstituted with water or sauce for consumption, or is used directly in prepared dishes. It may also be deep-fried or simmered in sauce.[57]

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60 Ibid., pp. 168-169.
61 World Food Japan, Lonely Planet, 2002, p. 35.
62 The Joy of Japanese Cooking, K. Takahashi, Shufunomoto Col., Ltd., Japan, 1996, p. 31.
63 CX/PFV 02/9, Proposed Draft Codex Standard for Soy Sauce (at Step 3 of the Codex Procedure).
64 Asian Foods: Science and Technology, C.Y.W. Ang, K.S. Liu, & Y.-W. Huang, Eds., Chapter 6: Oriental Soy Foods, K.S. Liu, Technomic Publishing Co., Lancaster PA 1999, pp. 181-187.
65 Ibid., pp. 162-163.

12.9.5 Other protein products:

Includes milk protein, cereal protein and vegetable protein analogues of or substitutes for standard products, such as meat, fish or milk. Examples include: vegetable protein analogues, *fu* (a mixture of gluten (vegetable protein) and flour that is sold dried (baked) or raw, and is used as an ingredient, e.g., in miso soup), *paneer* (milk protein coagulated by the addition of citric acid from lemon or lime juice or of lactic acid from whey, that is strained into a solid mass, and is used in vegetarian versions of , e.g., hamburgers), proteinaceous meat and fish substitutes.

12.10 Fermented soybean products:

Includes all fermented soybeans and soybean products used as condiments or seasonings.

12.10.1 Fermented soybeans (e.g., natto):

The product is prepared from soybeans that have been steamed and fermented with certain fungi (starter). The soft, whole beans are covered with a viscous and sticky polymer, and have a sweet taste and distinct aroma. It includes products such as *dou chi* (China), *natto* (Japan), and *tempeh* (Indonesia).

12.10.2 Fermented soybean curd (soybean cheese):

The product is prepared by forming soybean curd into a loaf during the fermentation process. It is a soft, flavoured product, either in red, rice-yellow, or grey-green.

12.10.3 Fermented soybean paste (e.g., miso):

The product is made of soybeans, wheat flour, salt and water, using the process of fermentation. The product includes *dou jiang* (China), *doenjang* (Republic of Korea), or *miso* (Japan). May be used in the preparation of soups or dressings, or as a seasoning.[57, 66]

12.10.4 Fermented soy sauce:

A clear, non-emulsified sauce made of soybeans, wheat flour, salt, and water by the fermentation process.

13.0 Foodstuffs intended for particular nutritional uses:

Foods for special dietary use are specially processed or formulated to satisfy particular dietary requirements that exist because of a particular physical or physiological condition and/or specific disease and disorder. The composition of these foods must differ significantly from the composition of ordinary foods of comparable nature, if such foods exist.[67] Dietetic foods other than those in food category 13.0 are included in the categories for their standard counterparts.[68]

13.1 Infant formulae, follow-up formulae, and formulae for special medical purposes for infants:

Foods that are intended for infants and for young children as defined in the sub-categories 13.1.1, 13.1.2, and 13.1.3.

13.1.1 Infant formulae:

A human milk substitute for infants (aged no more than 12 months) that is specifically formulated to provide the sole source of nutrition during the first months of life up to the introduction of appropriate complementary feeding. Product is in a liquid form, either as a ready-to-eat product, or is reconstituted from a powder. Products, other than those under food category 13.1.3, may be, hydrolyzed protein and/or amino acid-based, or milk-based.

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66 Ibid., pp. 173-181.

67 Codex General Standard for Labelling of and Claims for Prepackaged Foods for Special Dietary Use (CXSN 146-1985).

68 For example, diet soda is found in 14.1.4.1, and low-joule jam is found in 04.1.2.5.

13.1.2 Follow-up formulae:

Food intended for use as a liquid part of the complementary feeding of infants (aged at least 6 months) and for young children (aged 1-3 years).[69] They may be ready-to-eat or in a powdered form to be reconstituted with water. Products, other than those under food category 13.1.3, may be soy based hydrolyzed protein and/or amino acid-based, or milk-based.

13.1.3 Formulae for special medical purposes intended for infants:

Foods for special dietary use that are specially processed or formulated and presented for the dietary management of infants and may be used only under medical supervision. They are intended for the exclusive or partial feeding of infants with limited or impaired capacity to take, digest, absorb or metabolize ordinary infant formulae or certain nutrients contained therein, or who have other special medically-determined nutrient requirement, whose dietary management cannot be achieved only by modification of the normal diet, by other foods for special dietary uses, or by a combination of the two.[70]

13.2 Complementary foods for infants and young children:

Foods that are intended for infants 6 months of age and older, and for progressive adaptation of infants and children to ordinary food. Products may be ready-to-eat or in powder form to be reconstituted with water, milk, or other suitable liquid.[71] These foods exclude infant formulae (food category 13.1.1), follow-up formulae (food category 13.1.2), and formulae for special medical purposes (food category 13.1.3).[72] Examples include: cereal-, fruit-, vegetable-, and meat-based "baby foods" for infants, "toddler foods," and "junior foods"; lactea flour, biscuits and rusks for children.

13.3 Dietetic foods intended for special medical purposes (excluding products of food category 13.1):

Foods for special dietary use that are specially processed or formulated and presented for the dietary management of patients and may be used only under medical supervision. They are intended for the exclusive or partial feeding of patients with limited or impaired capacity to take, digest, absorb or metabolize ordinary foods or certain nutrients contained therein, or who have other special medically-determined nutrient requirement, whose dietary management cannot be achieved only by modification of the normal diet, by other foods for special dietary uses, or by a combination of the two.

13.4 Dietetic formulae for slimming purposes and weight reduction:

Formula foods that when presented as "ready-to-eat" or when prepared in conformity with the directions for use are specifically presented as replacements for all or part of the total daily diet.[73] Includes products with reduced caloric content such as those that are low in sugar and/or fat, sugar- or fat-free, or contain sugar- and/or fat-substititues.

13.5 Dietetic foods (e.g, supplementary foods for dietary use) excluding products of food categories 13.1 - 13.4 and 13.6:

Products of high nutritional content, in liquid or solid form (e.g.., protein bars), to be used by individuals as part of a balanced diet to provide supplemental nutrition. Products are not intended to be used for purposes of weight loss or as part of a medical regimen.

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69 Codex Standard for Follow-Up Formula (CXSN 156-1987, Amended 1989).

70 Codex Standard for the Labelling of and Claims for Foods for Special Medical Purposes (CXSN 180-1991).

71 Codex Standard for Processed Cereal-Based Foods for Infants and Children (CXSTAN 74-1981, amended 1991 under revision).

72 Codex Standard for Canned Baby Foods (CXSN 073-1981, amended 1989).

73 Codex Standard for Formula Foods for Use in Weight Control Diets (CXSN 181-1991) and Codex Standard for Formula Foods for use in Very Low Energy Diets for Weight Reduction (CXSN 203-1995).

13.6 Food supplements:

Includes vitamin and mineral supplements in tablet or liquid form, where national jurisdictions regulate these products as food.[74]

14.0 Beverages, excluding dairy products:

This major category is divided into the broad categories of non-alcoholic (food category 14.1) and alcoholic (food category 14.2) beverages. Dairy-based beverages are included in food category 01.1.2.

14.1 Non-alcoholic ("soft") beverages:

This broad category includes waters and carbonated waters (food category 14.1.1), fruit and vegetable juices (food category 14.1.2), fruit and vegetable nectars (food category 14.1.3), water-based flavoured carbonated and non-carbonated drinks (food category 14.1.4), and water-based brewed or steeped beverages such as coffee and tea (food category 14.1.5).

14.1.1 Waters:

Includes natural waters (food category 14.1.1.1) and other bottled waters (food category 14.1.1.2), each of which may be non-carbonated or carbonated.

14.1.1.1 Natural mineral waters and source waters:

Waters obtained directly at the source and packaged close to the source; are characterized by the presence of certain mineral salts in relative proportions and trace elements or other constituents. Natural mineral water may be naturally carbonated (with carbon dioxide from the source), carbonated (with added carbon dioxide of another origin), decarbonated (with less carbon dioxide than present in the water at the source so it does not spontaneously give off carbon dioxide under conditions of standard temperature and pressure), or fortified (with carbon dioxide from the source), and non-carbonated (contains no free carbon dioxide).[75]

14.1.1.2 Table waters and soda waters:

Includes waters other than natural source waters that may be carbonated by addition of carbon dioxide and may be processed by filtration, disinfection, or other suitable means. These waters may contain added mineral salts. Carbonated and non-carbonated waters containing flavours are found in food category 14.1.4. Examples are table water, bottled water with or without added minerals, purified water, seltzer water, club soda, and sparkling water.

14.1.2 Fruit and vegetable juices:

This category applies only to fruit and vegetable juices. Beverages based on fruit and vegetable juices are found in food category 14.1.4.2. Fruit-vegetable juice blends have separate classifications for each component (i.e. fruit juice (food category 14.1.2.1) and vegetable juice (food category 14.1.3.1).

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74 Codex Committee on Nutrition and Foods for Special Dietary Uses, Draft Guideline for Vitamin and Mineral Supplements (at Step 3), ALINORM 03/26, Appendix II.

75 Codex Standard for Natural Mineral Waters (CXSN108-1997, Rev. 1, Amended 2001).

14.1.2.1 Fruit juice:

Fruit juice is the unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means. The juice is prepared by suitable processes, which maintain the essential physical, chemical, organoleptical and nutritional characteristics of the juices of the fruit from which it comes. The juice may be cloudy or clear, and may have restored (to the normal level attained in the same kind of fruit) aromatic substances and volatile flavour components, all of which must be obtained by suitable physical means, and all of which must have been recovered from the same kind of fruit. Pulp and cells obtained by suitable physical means from the same kind of fruit may be added. A single juice is obtained from one kind of fruit. A mixed juice is obtained by blending two or more juices or juices and purees, from different kinds of fruit. Fruit juice may be obtained, e.g., by directly expressing the juice by mechanical extraction processes, by reconstituting concentrated fruit juice (food category 14.1.2.3) with water, or in limited situations by water extraction of the whole fruit (e.g., prune juice from dried prunes).[76] Examples include: orange juice, apple juice, black currant juice, lemon juice, and orange-mango juice.

14.1.2.2 Vegetable juice:

Vegetable juice is the liquid unfermented but fermentable product intended for direct consumption obtained by mechanical expression, crushing, grinding, and/or sieving of one or more sound fresh vegetables or vegetables preserved exclusively by physical means. The juice may be clear, turbid, or pulpy. It may have been concentrated and reconstituted with water. Products may be based on a single vegetable (e.g., carrot) or blends of vegetables (e.g., carrots, celery).

14.1.2.3 Concentrates for fruit juice:

Concentrated fruit juice is the product that complies with the definition given in food category 14.1.2.1. It is prepared by the physical removal of water from fruit juice in an amount to increase the Brix level to a value at least 50% greater than that established for reconstituted juice from the same fruit. In the production of juice that is to be concentrated, suitable processes are used, and may be combined, with simultaneous diffusion of the pulp cells or fruit pulp by water, provided that the water extracted soluble fruit solids are added in-line to the primary juice, before the concentration procedure. Fruit juice concentrates may have restored (to the normal level attained in the same kind of fruit) aromatic substances and volatile flavour components, all of which must be obtained by suitable physical means, and all of which must be recovered from the same kind of fruit. Pulp and cells obtained by suitable physical means from the same kind of fruit may be added[76]. Sold in liquid, syrup and frozen forms for the preparation of a ready-to-drink juice by addition of water. Examples include: frozen orange juice concentrate, and lemon juice concentrate.

14.1.2.4 Concentrates for vegetable juice:

Prepared by the physical removal of water from vegetable juice. Sold in liquid, syrup and frozen forms for the preparation of a ready-to-drink juice by addition of water. Includes carrot juice concentrate.

14.1.3 Fruit and vegetable nectars:

Fruit and vegetable nectars are beverages produced from, purees, juices, or concentrates of either, blended with water and sugar, honey, syrups, and/or sweeteners. Fruit-vegetable nectar blends are reported under their components (i.e., fruit nectar (food category 14.1.3.1) and vegetable nectar (food category 14.1.3.2).

14.1.3.1 Fruit nectar:

Fruit nectar is the unfermented but fermentable product obtained by adding water with or without the addition of sugar, honey, syrups, and/or sweeteners to fruit juice, concentrated fruit juice, fruit purees or concentrated fruit purees, or a mixture of those products. Aromatic substances, volatile flavour components, pulp and cells, all of which must have been recovered from the same kind of fruit and obtained by suitable physical means, may be added. Products may be based on a single fruit or on fruit blends.[76] Examples include: pear nectar and peach nectar.

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[76] Draft General Standard for Fruit Juices and Nectars (ALINORM 03/39A, App. II; at Step 5 of the Codex procedure (ALINORM 03/41, App. VI)).

14.1.3.2 Vegetable nectar:

Product obtained by adding water with or without the addition of sugar, honey, syrups, and/or sweeteners to vegetable juice or concentrated vegetable juice, or a mixture of those products. Products may be based on a single vegetable or on a blend of vegetables.

14.1.3.3 Concentrates for fruit nectar:

Prepared by the physical removal of water from fruit nectar or its starting materials.[76] Sold in liquid, syrup and frozen forms for the preparation of a ready-to-drink nectar by addition of water. Examples: pear nectar concentrate and peach nectar concentrate.

14.1.3.4 Concentrates for vegetable nectar:

Prepared by the physical removal of water from vegetable nectar. Sold in liquid, syrup and frozen forms for the preparation of ready-to-drink nectars by addition of water.

14.1.4 Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks:

Includes all carbonated and non-carbonated varieties and concentrates. Includes products based on fruit and vegetable juices.[77] Also, includes coffee-, tea- and herbal-based drinks.

14.1.4.1 Carbonated water-based flavoured drinks:

Includes water-based flavored drinks with added carbon dioxide with nutritive, non-nutritive and/or intense sweeteners and other permitted food additives. Includes *gaseosa* (water-based drinks with added carbon dioxide, sweetener, and flavour), and sodas such as colas, pepper-types, root beer, lemon-lime, and citrus types, both diet/light and regular types. These beverages may be clear, cloudy, or may contain particulated matter (e.g., fruit pieces). Includes so-called "energy" drinks that are carbonated and contain high levels of nutrients and other ingredients (e.g., caffeine, taurine, carnitine).

14.1.4.2 Non-carbonated water-based flavoured drinks, including punches and ades:

Include water-based flavoured drinks without added carbon dioxide, fruit and vegetable juice-based drinks (e.g., almond, aniseed, coconut-based drinks, and ginseng drink), fruit flavoured ades (e.g., lemonade, orangeade), squashes (citrus-based soft drinks), capile groselha, lactic acid beverage, ready-to-drink coffee and tea drinks with or without milk or milk solids, and herbal-based drinks (e.g., iced tea, fruit-flavoured iced tea, chilled canned cappucino drinks) and "sports" drinks containing electrolytes. These beverages may be clear or contain particulated matter (e.g., fruit pieces), and may be unsweetened or sweetened with sugar or a non-nutritive high-intensity sweetener. Includes so-called "energy" drinks that are non-carbonated and contain high levels of nutrients and other ingredients (e.g., caffeine, taurine, carnitine).

14.1.4.3 Concentrates (liquid or solid) for water-based flavoured drinks:

Include powder, syrup, liquid and frozen concentrates for the preparation of carbonated or non-carbonated water-based non-alcoholic beverages by addition of water or carbonated water. Examples include: fountain syrups (e.g., cola syrup), fruit syrups for soft drinks, frozen or powdered concentrate for lemonade and iced tea mixes.

14.1.5 Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa:

Includes the ready-to-drink products (e.g., canned), and their mixes and concentrates. Examples include: chicory-based hot beverages (postum), rice tea, mate tea, and mixes for hot coffee and tea beverages (e.g., instant coffee, powder for hot cappucino beverages). Treated coffee beans for the manufacture of coffee products are also included. Ready-to-drink cocoa is included in food category 01.1.2, and cocoa mixes in food category 05.1.1.

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[77] Fruit and vegetable juices *per se* are found in 14.1.2.1 and 14.1.2.2, respectively.

14.2 Alcoholic beverages, including alcohol-free and low-alcoholic counterparts:

The alcohol-free and low-alcoholic counterparts are included in the same food category as the alcoholic beverage.

14.2.1 Beer and malt beverages:

Alcoholic beverages brewed from germinated barley (malt), hops, yeast, and water. Examples include: ale, brown beer, weiss beer, pilsner, lager beer, oud bruin beer, Obergariges Einfachbier, light beer, table beer, malt liquor, porter, stout, and barleywine.[78]

14.2.2 Cider and perry:

Fruit wines made from apples (cider) and pears (perry). Also includes cidre bouche.[79]

14.2.3 Grape wines:

Alcoholic beverage obtained exclusively from the partial or complete alcoholic fermentation of fresh grapes, whether crushed or not, or of grape must (juice).[80]

14.2.3.1 Still grape wine:

Grape wine (white, red, rosé, or blush, dry or sweet) that may contain up to a maximum 0.4g/100 ml (4000 mg/kg) carbon dioxide at 20 °C.

14.2.3.2 Sparkling and semi-sparkling grape wines:

Grape wines in which carbonation is produced during the fermentation process, either by bottle fermentation or closed tank fermentation. Also includes carbonated wine whose carbon dioxide is partially or totally of exogenous origin. Examples include: spumante, and “cold duck” wine.

14.2.3.3 Fortified grape wine, grape liquor wine, and sweet grape wine:

Grape wines produced either by: (i) the fermentation of grape must (juice) of high sugar concentration; or (ii) by the blending of concentrated grape juice with wine; or (iii) the mixture of fermented must with alcohol. Examples include: grape dessert wine.

14.2.4 Wines (other than grape):

Includes wines made from fruit other than grapes, apples and pears,[81] and from other agricultural products, including grain (e.g., rice). These wines may be still or sparkling. Examples include: rice wine (*sake*), and sparkling and still fruit wines.

14.2.5 Mead:

Alcoholic liquor made from fermented honey, malt and spices, or just of honey. Includes honey wine.

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78 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 644.
79 Ibid. pp. 669-679.
80 Ibid. p, 654. OIV – International Code of Oenological Practices
81 Grape wines are included in 14.2.3; and apple wine (cider) and pear wine (perry) are included in 14.2.2.

14.2.6 Distilled spirituous beverages containing more than 15% alcohol:

Includes all distilled spirituous beverages derived from grain (e.g., corn, barley, rye, wheat), tubers (e.g., potato), fruit (e.g., grapes, berries) or sugar cane that contain greater than 15% alcohol. Examples include: aperitifs, brandy (distilled wine), cordials, liqueurs (including emulsified liqueurs), bagaceira belha (grappa from Portugal; bagaceira is a drink distilled from *bagaço* (pressed skins, seeds and stalks of the grapes)), eau de vie (a brandy), gin, grappa (Italian brandy distilled from the residues of pressed wine), marc (brandy distilled from grape or apple residue), korn (grain spirit (*schnapps*) of Germany, usually derived from rye (*Roggen*), sometimes from wheat (*Weizen*) or both (*Getreide*); also labeled as *Kornbrantt* or *Kornbranttwein*),[82] mistela (also *mistelle* (France) and *jeropico* (South Africa); unfermented grape juice fortified with grape alcohol), ouzo (Greek spirit drink flavoured with aniseed), rum, tsikoudia (grape marc spirit from Crete), tsipouro (grape marc spirit from certain regions in Greece), wienbrand (style of grape brandy devised by Hugo Asbach, Rudesheim, Germany; literally, "burnt wine") *cachaça* (Brazilian liquor made from fermented distilled sugar cane juice),[83] tequila**,** whiskey, and vodka.[79, 84, 85]

14.2.7 Aromatized alcoholic beverages (e.g., beer, wine and spirituous cooler-type beverages, low-alcoholic refreshers):

Includes all non-standardized alcoholic beverage products. Although most of these products contain less than 15% alcohol, some traditional non-standardized aromatized products may contain up to 24% alcohol. Examples include aromatized wine, cider and perry; apéritif wines; americano; batidas (drinks made from *cachaça*, fruit juice or coconut milk and, optionally, sweetened condensed milk); bitter soda and bitter vino; clarea (also claré or clary; a mixture of honey, white wine and spices; it is closely related to *hippocras*, which is made with red wine); jurubeba alcoholic drinks (beverage alcohol product made from the *Solanum paniculatum* plant indigenous to the north of Brazil and other parts of South America); negus (sangria; a hot drink made with port wine, sugar, lemon and spice); sod, saft, and sodet; vermouth; zurra (in Southern Spain, a sangria made with peaches or nectarines; also the Spanish term for a spiced wine made of cold or warm wine, sugar, lemon, oranges or spices); *amazake* (a sweet low-alcoholic beverages (<1% alcohol) made from rice by *koji*; *mirin* (a sweet alcoholic beverage (<10% alcohol) made from a mixture of *shoochuu* (a spirituous beverage), rice and *koji*); "malternatives," and prepared cocktails (mixtures of liquors, liqueurs, wines, essences, fruit and plant extracts, etc. marketed as ready-to-drink products or mixes). Cooler-type beverages are composed of beer, malt beverage, wine or spirituous beverage, fruit juice(s), and soda water (if carbonated).[79, 84, 86]

15.0 Ready-to-eat savouries:

Includes all types of savoury snack foods.

15.1 Snacks - potato, cereal, flour or starch based (from roots and tubers, pulses and legumes):

Includes all plain and flavoured savoury snacks, but excludes plain crackers (food category 07.1.2). Examples include potato chips, popcorn, pretzels, rice crackers (*senbei*), flavoured crackers (e.g., cheese-flavoured crackers), *bhujia* (*namkeen*; snack made of a mixture of flours, maize, potatoes, salt, dried fruit, peanuts, spices, colours, flavours, and antioxidants), and *papads* (prepared from soaked rice flour or from black gram or cow pea flour, mixed with salt and spices, and formed into balls or flat cakes).

15.2 Processed nuts, including coated nuts and nut mixtures (with e.g., dried fruit):

Includes all types of whole nuts processed by, e.g., dry-roasting, roasting, marinating or boiling, either in-shell or shelled, salted or plain. Yoghurt-, cereal-, and honey-covered nuts, and dried fruit-nut-and-cereal snacks (e.g., "trail mixes") are classified here. Chocolate-covered nuts are classified in food category 05.1.4.

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82 *The Wordswoth Dictionary of Drink*, N. Halley, Wordsworth Ltd., Hertfordshire, England, 1996.

83 *Insight Guide: Rio de Janeiro*, APA Publications, GmBH & Co., Verlag KG, Singapore, 2000, p. 241.

84 *OIV Lexique de la Vigne.*

85 See also: Glossary of Portuguese Terms at: www.bar-do-binho.com/help.htm

86 *Alexis Lichinne's New Encyclopedia of Wine and Spirits*, 3rd Ed. See also: rain-tree.com/jurubeba.htm, www.florilegium.org/files/BEVERAGES/Clarea-d-Agua-art.html, and wine.about.com/food/wine/library/types/bl_sangria.htm.

15.3 Snacks - fish based:

This describes savoury crackers with fish, fish products or fish flavouring. Dried fish *per se* that may be consumed as a snack is assigned to food category 09.2.5, and dried meat snacks (e.g., beef jerky, pemmican) are assigned to food category 08.3.1.2.

16.0 Composite foods – foods that could not be placed in categories:

Includes prepared or composite dishes in which additives are directly added to the composite food. Additives may also be present as a result of carry-over from the ingredients. For example, an additive that is used as an ingredient in a meat pie, but not in any of its ingredients (e.g., in the crust) is reported in this category. Examples of composite dishes include: dehydrated culinary products which may contain processed vegetables or animal ingredients, and spices, to be reconstituted with water before cooking, prepared dinners (e.g., frozen entrees), casseroles, mincemeat and snack dips (e.g., onion dip).

CODEX GENERAL STANDARD FOR FOOD ADDITIVES
(CODEX STAN 192-1995, Rev. 4-2003)

DRAFT (AT STEP 8) AND PROPOSED DRAFT (AT STEP 5/8) FOOD ADDITIVE PROVISIONS FOR INCLUSION IN TABLE 1[1]

CARNAUBA WAX

Carnauba Wax INS: 903

Function: Anticaking Agent, Adjuvant, Bulking Agent, Carrier Solvent, Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
04.1.1.2	Surface-treated fresh fruit	400 mg/ kg		8	
04.1.2	Processed fruit	400 mg/ kg		8	
04.2.1.2	Surface-treated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds	400 mg/ kg	Note 79	8	
05.1.4	Cocoa and chocolate products[2]	500 mg/kg	Note 8	8	

[1] For easy of reference, the revisions to food additive provisions of the GSFA are indicated in the form of Table 1 only. An updated version of Tables 1 (Additives Permitted for Use Under Specified Conditions in Certain Food Categories or Individual Food Items) and 2 (Food Categories or Individual Food Items in Which Food Additives are Permitted) will be made available upon adoption by the Commission of the proposed revisions as indicated in this Appendix.

[2] The relevant Sections of the Codex Standard for Chocolate and Chocolate Products and the Codex General Standard for Food Additives would be amended upon adoption by the Commission of the proposed revisions as indicated in this Appendix in order to keep consistency throughout the Codex system (see also Appendix III).

BENZOATES

Benzoic Acid INS: 210 Sodium Benzoate INS: 211

Potassium Benzoate INS: 212 Calcium Benzoate INS: 213

Function: Preservative

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
06.4.3	Pre-cooked pastas and noodles and like products	1000 mg/kg	Note 13	8	
07.0	Bakery wares	1000 mg/kg	Note 13	8	
09.2.5	Smoked, dried, fermented, and/or salted fish and fish products, including mollusks, crustaceans, and echinoderms	200 mg/kg	Notes 13 & 121	8	
14.1.2.1	Fruit juice	1000 mg/kg	Notes 13 & 122	8	
14.1.2.3	Concentrates for fruit juice	1000 mg/kg	Notes 13, 122 & 127	8	
14.1.3.1	Fruit nectar	1000 mg/kg	Notes 13 & 122	8	
14.1.3.3	Concentrates for fruit nectar	1000 mg/kg	Notes 13, 122 & 127	8	
14.1.3.4	Concentrates for vegetable nectar	600 mg/kg	Note 13	8	
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	600 mg/kg	Note 13 & 123	8	
14.1.5	Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa	1000 mg/kg	Note 13	5/8	
14.2.2	Cider and perry	1000 mg/kg	Note 13 & 124	8	
14.2.5	Mead	1000 mg/kg	Note 13	8	
15.1	Snacks - potato, cereal, flour or starch based (from roots and tubers, pulses and legumes)	1000 mg/kg	Note 13	8	
16.0	Composite foods - foods that could not be placed in categories 0.1 – 15.0	1000 mg/kg	Note 13	8	

QUILLAIA EXTRACT

Quillaia Extract INS: 999

Function: Foaming Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	100 mg/kg		8	

MINERAL OIL (HIGH VISCOSITY)

Mineral Oil (High Viscosity) INS: 905d

Function: Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
05.1	Cocoa products and chocolate products including imitations and chocolate substitutes	2000 mg/kg	Note 3	8	
05.2	Confectionery including hard and soft candy, nougats, etc. other than food categories 05.1, 05.3, and 05.4	2000 mg/kg	Note 3	8	
05.3	Chewing gum	20,000 mg/kg		8	
05.4	Decorations (e.g., for fine bakery wares), toppings (non-fruit), and sweet sauces	2000 mg/kg	Note 3	8	
06.1	Whole, broken, or flaked grain, including rice	800 mg/kg	Note 98	5/8	
07.0	Bakery wares	3000 mg/kg	Note 125	8	
08.2.3	Frozen processed meat, poultry, and game products in whole pieces or cuts	950 mg/kg	Note 3	8	
08.3.3	Frozen processed comminuted meat, poultry, and game products	950 mg/kg	Note 3	8	

MINERAL OIL (MEDIUM & LOW VISCOSITY, CLASS I)

Mineral Oil (Medium & Low Viscosity, Class I) INS: 905e

Function: Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
05.0	Confectionery	2000 mg/kg	Note 3	8	
07.1.1	Breads and rolls	3000 mg/kg	Notes 36 & 126	8	

DIMETHYL DICARBONATE

Dimethyl Dicarbonate INS: 242

Function: Preservative

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.5	Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa	250 mg/kg	Note 18	8	
14.2.2	Cider and perry	250 mg/kg	Note 18	8	
14.2.3	Grape wines	200 mg/kg	Note 18	8	
14.2.4	Wines (other than grape)	250 mg/kg	Note 18	8	
14.2.5	Mead	200 mg/kg	Note 18	8	

GUAIAC RESIN

Guaiac Resin INS: 314

Function: Antioxidant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
12.6	Sauces and like products	600 mg/kg	Note 15	8	

LYSOZYME HYDROCHLORIDE

Lysozyme Hydrochloride INS: 1105

Function: Preservative

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.2.2	Cider and perry	500 mg/kg		8	
14.2.3	Grape wines	500 mg/kg		8	

POLYDIMETHYLSILOXANE

Polydimethylsiloxane INS: 900a

Function: Anticaking Agent, Antifoaming Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
04.2.2.6	Vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed pulps and preparations (e.g., vegetable desserts and sauces, candied vegetables) other than food category 04.2.2.5	50 mg/kg		8	
13.3	Dietetic foods intended for special medical purposes (excluding products of food category 13.1)	50 mg/kg		8	
13.4	Dietetic formulae for slimming purposes and weight reduction	50 mg/kg		8	
13.5	Dietetic foods (e.g., supplementary foods for dietary use) excluding products of food categories 13.1- 13.4 and 13.6	50 mg/kg		8	
13.6	Food supplements	50 mg/kg		8	

MICROCRYSTALLINE WAX

Microcrystalline Wax INS: 905ci

Function: Antifoaming Agent, Bulking Agent, Glazing Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
01.6.2.2	Rind of ripened cheese	30,000 mg/kg		5/8	
04.1.1.2	Surface-treated fresh fruit	50 mg/kg		5/8	
04.2.1.2	Surface-treated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds	50 mg/kg		5/8	

EDTAs

Calcium Disodium Ethylene Diamine Tetra Acetate INS: 385

Disodium Ethylene Diamine Tetra Acetate INS: 386

Function: Antioxidant, Preservative, Sequestrant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.2.1	Beer and malt beverages	25 mg/kg	Note 21	8	

CYCLODEXTRIN, BETA-

Cyclodextrin, Beta- INS: 459

Function: Stabilizer, Binder

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
15.1	Snacks - potato, cereal, flour or starch based (from roots and tubers, pulses and legumes)	500 mg/kg		8	

GALLATE, PROPYL

Gallate, Propyl INS: 310

Function: Antioxidant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
02.1	Fats and oils essentially free from water	200 mg/kg	Note 15	8	
02.2.1.2	Margarine and similar products	200 mg/kg	Note 15	8	
02.2.1.3	Blends of butter and margarine	200 mg/kg	Note 15	8	
02.2.2	Emulsions containing less than 80% fat	200 mg/kg	Note 15	8	
02.3	Fat emulsions mainly of type oil-in-water, including mixed and/or flavoured products based on fat emulsions	200 mg/kg	Note 15	8	
02.4	Fat-based desserts excluding dairy-based dessert products of food category 01.7	200 mg/kg	Note 15	8	

Notes to the Comments for the Revised Draft General Standard for Food Additives (36th CCFAC)

Note 1: As adipic acid
Note 2: On dry ingredient, dry weight, dry mix or concentrate basis.
Note 3: Surface treatment.
Note 4: For decoration, stamping, marking or branding the product.
Note 5: Used in raw materials for manufacture of the finished food.
Note 6: As aluminium.
Note 7: Use level not in finished food.
Note 8: As bixin.
Note 9: As total bixin or norbixin.
Note 10: As ascorbyl stearate.
Note 11: Flour basis.
Note 12: Carryover from flavouring substances.
Note 13: As benzoic acid.
Note 14: Served at greater than 5-fold dilution.
Note 15: Fat or oil basis.
Note 16: For use in glaze, coatings or decorations for fruit, vegetables, meat or fish.
Note 17: As cyclamic acid.
Note 18: Added level; residue not detected in ready-to-eat food.
Note 19: Used in cocoa fat; use level on ready-to-eat basis.
Note 20: On total amount of stabilizers, thickeners and/or gums.
Note 21: As anhydrous calcium disodium EDTA.
Note 22: For use in smoked fish products only.
Note 23: As iron.
Note 24: As anhydrous sodium ferrocyanide.
Note 25: As formic acid.
Note 26: For use in baking powder only.
Note 27: As p-hydroxybenzoic acid.
Note 28: ADI conversion: if a typical preparation contains 0.025 µg/U, then the ADI of 33,000 U/kg bw becomes: [(33000 U/kg bw) x (0.025 µg/U) x (1 mg/1000 µg)] = 0.825 mg/kg bw
Note 29: Reporting basis not specified.
Note 30: As residual NO3 ion.
Note 31: Of the mash used.
Note 32: As residual NO2 ion.
Note 33: As phosphorus.
Note 34: Anhydrous basis.
Note 35: Except for use in special formula at 20,000 mg/kg.
Note 36: Residual level.
Note 37: As weight of nonfat milk solids.
Note 38: Level in creaming mixture.
Note 39: Only when product contains butter or other fats and oils.
Note 40: Except for use in special formula at 200 mg/kg.
Note 41: Use in breading or batter coatings only.
Note 42: As sorbic acid
Note 43: As tin.
Note 44: As residual SO2.
Note 45: As tartaric acid.
Note 46: As thiodipropionic acid.
Note 47: On egg yolk weight, dry basis.
Note 48: For olives only.
Note 49: For use on citrus fruits only.
Note 50: For use in fish roe only.
Note 51: For use in herbs and salt substitutes only.
Note 52: For use in butter only.

Note 53: For use in coatings only.
Note 54: Except for use in special formula at 1200 mg/kg.
Note 55: Added level.
Note 56: Provided starch is not present.
Note 57: GMP is 1 part benzoyl peroxide and not more than 6 parts of the subject additive by
Note 58: As calcium.
Note 59: Use as packing gas.
Note 60: If used as a carbonating agent, the CO2 in the finished wine shall not exceed 39.2 mg/kg.
Note 61: For use in minced fish only.
Note 62: As copper.
Note 63: On amount of dairy ingredients.
Note 64: Level added to dry beans; 200 mg/kg in ready-to-eat food, anhydrous basis.
Note 65: Carryover from nutrient preparations.
Note 66: As formaldehyde. For use in provolone cheese only.
Note 67: Except for use in liquid egg whites at 8800 mg/kg as phosphorus, and in liquid whole eggs at 14,700 mg/kg as phosphorus.
Note 68: For use in natural mineral waters only.
Note 69: Use as carbonating agent.
Note 70: As the acid.
Note 71: Calcium, potassium and sodium salts only.
Note 72: Ready-to-eat basis.
Note 73: Except whole fish.
Note 74: Use level for deep orange coloured cheeses; 25 mg/kg for orange coloured cheeses; 10 mg/kg for normal coloured cheeses.
Note 75: Use in milk powder for vending machines only.
Note 76: Use in potatoes only.
Note 77: As mono-isopropyl citrate.
Note 78: For use in tocino (fresh, cured sausage) only.
Note 79: For use on nuts only.
Note 80: Equivalent to 2 mg/dm2 surface application to a maximum depth of 5 mm.
Note 81: Equivalent to 1 mg/dm2 surface application to a maximum depth of 5 mm.
Note 82: For use in shrimp; 6000 mg/kg for Crangon crangon and Crangon vulgaris.
Note 83: For use in sauce only.
Note 84: For use in special formula at 10,000 mg/kg.
Note 85: Excluding use in surimi and fish roe products at 500 mg/kg.
Note 86: Use in whipped dessert toppings other than cream only.
Note 87: Treatment level.
Note 88: Carryover from the ingredient.
Note 89: Except for use in dried tangle (KONBU) at 150 mg/kg.
Note 90: For use in milk-sucrose mixtures used in the finished product.
Note 91: For use in special formula only.
Note 92: On the weight of the protein before re-hydration.
Note 93: Except natural wine produced from Vitis Vinifera grapes.
Note 94: For use in loganiza (fresh, uncured sausage) only.
Note 95: For use in surimi and fish roe products only.
Note 96: Carryover from use in fats.
Note 97: In cocoa and chocolate products.
Note 98: For dust control.
Note 99: For use in fish fillets and minced fish only.
Note 100: For use as a dispersing agent in dill oil used in the final food.
Note 101: Level based on the maximum recommended daily dose of 475 mg/dose, assuming one 600 mg tablet is consumed per day.
Note 102: For use as a surfactant or wetting agent for colours in the food.
Note 103: Except for use in special white wines at 400 mg/kg.
Note 104: Maximum 5000 mg/kg residue in bread and yeast-leavened bakery products.

Note 105: Except for use in dried gourd strips (KAMPYO) at 5000 mg/kg.
Note 106: Except for use in Dijon mustard at 500 mg/kg.
Note 107: Except for use in concentrated grape juice for home wine making at 2000 mg/kg.
Note 108: For use on coffee beans only.
Note 109: Use level reported as 25 lbs/1000 gal x (0.45 kg/lb) x (1 gal/3.75 L) x (1 L/kg) x (106mg/kg) = 3000 mg/kg
Note 110: For use in frozen French fried potatoes only.
Note 111: For use in dipping solution only.
Note 112: For use in grated cheese only.
Note 113: Excluding butter.
Note 114: Excluding cocoa powder.
Note 115: Except for use in special formula at 12,000 mg/kg.
Note 116: For use in doughs only.
Note 117: Except for use in loganiza (fresh, uncured sausage) at 1000 mg/kg.
Note 118: Except for use in tocino (fresh, cured sausage) at 1000 mg/kg.
Note 119: As carrier for flavours.
Note 120: Except for use in caviar at 2500 mg/kg.
Note 121: Excluding fermented fish products at 1000 mg/kg.
Note 122: Subject to national legislation of importing country.
Note 123: 1000 mg/kg for beverages with pH greater than 3.5.
Note 124: Only for products containing less than 7% ethanol.
Note 125: For use as a release agent for baking pans in a mixture with vegetable oil.
Note 126: For releasing dough in dividing or baking only.
Note 127: As served to the consumer

CODEX GENERAL STANDARD FOR FOOD ADDITIVES
(CODEX STAN 192-1995, Rev. 4-2003)

REVOCATION OF FOOD ADDITIVE PROVISIONS IN TABLE 1[1]

OXYSTEARIN

Oxystearin INS: 387

Function: Antifoaming Agent, Crystallization Inhibitor, Release Agent, Sequestrant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
02.1	Fats and oils essentially free from water	1250 mg/kg		8	1998
12.6.1	Emulsified sauces (e.g., mayonnaise, salad dressing)	GMP		8	1998
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	250 mg/kg		8	1998

CARAMEL COLOUR, CLASS III

Caramel Colour, Class III - Ammonia Process INS: 150c

Function: Colour

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.2.3	Concentrates for Fruit Juice	GMP		8	1999

CARAMEL COLOUR, CLASS IV

Caramel Colour, Class III - Ammonia Sulphite Process INS: 150d

Function: Colour

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.2.3	Concentrates for Fruit Juice	GMP		8	1999

[1] For easy of reference, the revocation of food additive provisions of the GSFA are indicated in the form of Table 1 only. An updated version of Tables 1 (Additives Permitted for Use Under Specified Conditions in Certain Food Categories or Individual Food Items) and 2 (Food Categories or Individual Food Items in Which Food Additives are Permitted) will be made available upon approval by the Commission of the proposed revocations as indicated in this Appendix.

CODEX GENERAL STANDARD FOR FOOD ADDITIVES
(CODEX STAN 192-1995, Rev. 4-2003)

DISCONTINUATION OF DRAFT (STEP 6) AND PROPOSED DRAFT (STEP 3)
FOOD ADDITIVE PROVISIONS

I. The following draft (Step 6) and proposed draft (Step 3) food additive provisions proposed for discontinuation are indicated here below in the form of Table 1 (Additives Permitted for Use Under Specified Conditions in Certain Food Categories or Individual Food Items), although they also apply to Table 2 (Food Categories or Individual Food Items in Which Food Additives are Permitted) of the GSFA.

BENZOATES

Benzoic Acid	INS: 210	Sodium Benzoate	INS: 211
Potassium Benzoate	INS: 212	Calcium Benzoate	INS: 213

Function: Preservative

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
04.1.2.4	Canned or bottled (pasteurized) fruit	800	mg/kg	Note 13	6	
04.2.2.4	Canned or bottled (pasteurized) or retort pouch vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds	1000	mg/kg	Note 13	6	
05.1.1	Cocoa mixes (powders) and cocoa mass/cake	700	mg/kg	Note 13	6	
12.5	Soups and broths	1000	mg/kg	Note 13	6	
14.1.2.2	Vegetable juice	2000	mg/kg	Note 13	6	
14.1.2.4	Concentrates for Vegetable juice	1400	mg/kg	Note 13	6	
14.1.3.2	Vegetable nectar	2000	mg/kg	Note 13	6	

TANNIC ACID (TANNINS, FOOD GRADE)

Tannic Acid (Tannins, Food Grade) INS: 181

Function: Colour

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
01.7	Dairy-based desserts (e.g., pudding, fruit or flavoured yoghurt)	400	mg/kg		6	
02.1.3	Lard, tallow, fish oil, and other animal fats		GMP		6	
02.4	Fat-based desserts excluding dairy-based dessert products of food category 01.7	50	mg/kg	Note 7	6	
04.1.2.9	Fruit-based desserts, including fruit-flavoured water-based desserts	50	mg/kg		6	
04.1.2.11	Fruit fillings for pastries	50	mg/kg		6	
05.1.3	Cocoa-based spreads, including fillings	50	mg/kg		6	
05.2	Confectionery including hard and soft candy, nougat, etc. other than food categories 05.1, 05.3 and 05.4	400	mg/kg		6	
05.3	Chewing gum		GMP		6	
07.0	Bakery wares	100	mg/kg		6	
08.2	Processed meat, poultry, and game products in whole pieces or cuts	10	mg/kg		6	
08.3	Processed comminuted meat, poultry, and game products	10	mg/kg		6	
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	50	mg/kg		6	
14.2.1	Beer and malt beverages	150	mg/kg		6	
14.2.2	Cider and perry	200	mg/kg		6	
14.2.3	Grape wines	3000	mg/kg		6	
14.2.4	Wines (other than grape)	150	mg/kg		6	
14.2.5	Mead	150	mg/kg		6	
14.2.6	Distilled spirituous beverages containing more than 15% alcohol	150	mg/kg		6	
14.2.7	Aromatized alcoholic beverages (e.g., beer, wine and spirituous cooler-type beverages, low alcoholic refreshers)	150	mg/kg		6	

OXYSTEARIN

Oxystearin INS: 387

Function: Antifoaming Agent, Crystallization Inhibitor, Release Agent, Sequestrant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
02.2.1.2	Margarine and similar products	1250 mg/kg		6	
02.2.2	Emulsions containing less than 80% fat	1250 mg/kg		6	
02.3	Fat emulsions mainly of type oil-in-water, including mixed and/or flavoured products based on fat emulsions	1250 mg/kg		6	
13.6	Food supplements	GMP		6	

MINERAL OIL

Mineral Oil INS: 905a

Function: Adjuvant, Antioxidant, Glazing Agent, Humectant, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
04.1.1.2	Surface-treated fresh fruit	GMP		6	
04.1.2.2	Dried fruit	5000 mg/kg		6	
04.2.1.2	Surface-treated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds	GMP		6	
04.2.2.2	Dried vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds	200 mg/kg		6	
04.2.2.4	Canned or bottled (pasteurized) or retort pouch vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds	200 mg/kg		6	
05.0	Confectionery	3000 mg/kg	Note 3	6	
05.0	Confectionery	5000 mg/kg	Note 3	3	
06.1	Whole, broken, or flaked grain, including rice	200 mg/kg	Note 98	6	
06.2	Flours and starches	3000 mg/kg		6	
07.0	Bakery wares	3000 mg/kg	Note 3	6	
08.2.3	Frozen processed meat, poultry, and game products in whole pieces or cuts	950 mg/kg	Note 3	6	
08.3.3	Frozen processed comminuted meat, poultry, and game products	950 mg/kg	Note 3	6	
08.4	Edible casings (e.g., sausage casings)	50000 mg/kg		6	
10.1	Fresh eggs	5000 mg/kg	Note 3	3	
10.2.3	Dried and/or heat coagulated egg products	1000 mg/kg		6	
12.2	Herbs, spices, seasonings and condiments (e.g., seasoning for instant noodles)	6000 mg/kg		6	
12.6	Sauces and like products	6000 mg/kg		6	
12.8	Yeast and like products	1500 mg/kg		6	
13.6	Food supplements	6000 mg/kg		6	

MINERAL OIL (MEDIUM & LOW VISCOSITY, CLASS I)

Mineral Oil (Medium & Low Viscosity, Class I) INS: 905e

Function: Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
05.3	Chewing gum	20000 mg/kg		6	

MINERAL OIL (MEDIUM & LOW VISCOSITY, CLASSES II & III)

Mineral Oil (Medium & Low Viscosity, Classes II & III) INS: 905f & 905g

Function: Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
05.3	Chewing gum	10000 mg/kg		6	

POLYDIMETHYLSILOXANE

Polydimethylsiloxane INS: 900a

Function: Anticaking Agent, Antifoaming Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
08.1.1	Fresh meat, poultry, and game, whole pieces or cuts	GMP		6	
11.1	Refined and raw sugars	50 mg/kg		6	
13.0	Foodstuffs intended for particular nutritional uses	50 mg/kg		6	

MICROCRYSTALLINE WAX

Microcrystalline Wax INS: 905ci

Function: Antifoaming Agent, Bulking Agent, Glazing Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
04.1.1.2	Surface-treated fresh fruit	GMP		6	

EDTAs

Calcium Disodium Ethylene Diamine Tetra Acetate INS: 385 Disodium Ethylene Diamine Tetra Acetate INS: 386

Function: Antioxidant, Preservative, Sequestrant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.2	Alcoholic beverages, including alcohol-free and low-alcoholic counterparts	25 mg/kg	Note 21	6	

GALLATE, PROPYL

Gallate, Propyl INS: 310

Function: Antioxidant

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
02.0	Fats and oils, and fat emulsions (type water-in-oil)	200 mg/kg	Note 15	6	

II. The following draft (Step 6) and proposed draft (Step 3) food additive provisions proposed for discontinuation in food categories 14.1.2.1 Fruit Juice, 14.1.2.3 Concentrates for Fruit Juice, 14.1.3.1 Fruit Nectar, and 14.1.3.3 Concentrates for Fruit Nectar are presented here below in the form of Table 2 (Food Categories or Individual Food Items in Which Food Additives are Permitted), although they also apply to Table 1 (Additives Permitted for Use Under Specified Conditions in Certain Food Categories or Individual Food Items) of the GSFA. Consequential changes in the general categories 14.1.2 Fruit and Vegetable Juices and 14.1.3 Fruit and Vegetable Nectars are also indicated.

Food Category No. 14.1.2 Fruit and vegetable juices

Additive	INS	Step/Yr	Max	Comments
ASPARTAME	951	6 /	2000 mg/kg	
CARAMEL COLOUR, CLASS III	150c	6 /	GMP	
CARAMEL COLOUR, CLASS IV	150d	6 /	GMP	
CAROTENES, VEGETABLE	160aii	3 /	GMP	
HYDROXYBENZOATES, p-	214, 216, 218	6 /	1000 mg/kg	Note 27
PHOSPHATES	338; 339i-iii; 340i-iii; 341i-iii; 342i,ii; 343ii,iii; 450i,iii,v,vi ; 451i,ii; 452i,ii,iv,v;	6 /	2500 mg/kg	Notes 33 & 88
TARTRATES	334; 335i,ii; 336i,ii; 337	6 /	4000 mg/kg	Note 45

Food Category No. 14.1.2.1 Fruit juice

Additive	INS	Step/Yr	Max	Comments
ACESULFAME POTASSIUM	950	6 /	600 mg/kg	
ACETYLATED DISTARCH ADIPATE	1422	3 /	GMP	
ACETYLATED DISTARCH PHOSPHATE	1414	3 /	GMP	
ACID TREATED STARCH	1401	3 /	GMP	
AGAR	406	6 /	GMP	
ALGINIC ACID	400	3 /	GMP	
ALKALINE TREATED STARCH	1402	3 /	GMP	
ALPHA-AMYLASE (ASPERGILLUS ORYZAE VAR.)	1100	6 /	GMP	
ANNATTO EXTRACTS	160b	6 /	GMP	
ASCORBIC ACID	300	6 /	540 mg/kg	
AZORUBINE	122	6 /	GMP	
BEET RED	162	6 /	GMP	
BLEACHED STARCH	1403	3 /	GMP	
CALCIUM ALUMINIUM SILICATE (SYNTHETIC)	556	6 /	GMP	
CALCIUM CARBONATE	170i	6 /	GMP	
CALCIUM CHLORIDE	509	6 /	2000 mg/kg	
CANTHAXANTHIN	161g	6 /	5 mg/kg	
CARBON DIOXIDE	290	6 /	3000 mg/kg	Notes 59 & 69
CARMINES	120	6 /	100 mg/kg	
CARNAUBA WAX	903	6 /	GMP	
CAROB BEAN GUM	410	6 /	GMP	
CAROTENOIDS	160ai,e,f	6 /	100 mg/kg	
CARRAGEENAN	407	6 /	3000 mg/kg	
CHLOROPHYLLS	140	6 /	GMP	

CHLOROPHYLLS, COPPER COMPLEXES	141i,ii	6 /	GMP	
CITRIC ACID	330	6 /	GMP	
CURCUMIN	100i	6 /	100 mg/kg	
CYCLAMATES	952	6 /	1000 mg/kg	Note 17
DEXTRINS, WHITE AND YELLOW, ROASTED STARCH	1400	3 /	GMP	
DISTARCH PHOSPHATE	1412	3 /	GMP	
ENZYME TREATED STARCH	1405	3 /	GMP	
ERYTHORBIC ACID	315	6 /	GMP	
ERYTHRITOL	968	3 /	20000 mg/kg	
GELLAN GUM	418	6 /	GMP	
GUAR GUM	412	6 /	GMP	
GUM ARABIC	414	6 /	GMP	
HYDROXYPROPYL DISTARCH PHOSPHATE	1442	3 /	GMP	
HYDROXYPROPYL STARCH	1440	3 /	GMP	
ISOMALT	953	3 /	30000 mg/kg	
KARAYA GUM	416	6 /	GMP	
KONJAC FLOUR	425	6 /	GMP	
MALIC ACID (DL-)	296	6 /	3500 mg/kg	
MALTITOL and MALTITOL SYRUP	965	3 /	20000 mg/kg	
MICROCRYSTALLINE CELLULOSE	460i	6 /	GMP	
MONOSTARCH PHOSPHATE	1410	3 /	GMP	
NITROUS OXIDE	942	6 /	GMP	
OXIDIZED STARCH	1404	3 /	GMP	
PECTINS (AMIDATED AND NON-AMIDATED)	440	6 /	3000 mg/kg	
PHOSPHATED DISTARCH PHOSPHATE	1413	3 /	GMP	
PONCEAU 4R	124	6 /	GMP	
POTASSIUM ALGINATE	402	6 /	2500 mg/kg	
POWDERED CELLULOSE	460ii	6 /	GMP	
PROCESSED EUCHEUMA SEAWEED	407a	3 /	GMP	
PROPYLENE GLYCOL ALGINATE	405	3 /	GMP	
PROTEASE (A. ORYZAE VAR.)	1101i	6 /	GMP	
RIBOFLAVINES	101i,ii	6 /	GMP	
SODIUM ALGINATE	401	6 /	20000 mg/kg	
SODIUM ASCORBATE	301	6 /	200 mg/kg	
SODIUM CARBOXYMETHYL CELLULOSE	466	6 /	5000 mg/kg	
SODIUM ERYTHORBATE	316	6 /	GMP	
SORBATES	200-203	6 /	2100 mg/kg	Note 42
SORBITOL (INCLUDING SORBITOL SYRUP)	420	3 /	14000 mg/kg	
STANNOUS CHLORIDE	512	6 /	8 mg/kg	Note 43
STARCH ACETATE	1420	3 /	GMP	
STARCH SODIUM OCTENYL SUCCINATE	1450	3 /	GMP	
SUCRALOSE	955	6 /	250 mg/kg	
SUCRALOSE	955	3 /	300 mg/kg	
SULPHITES	220-225, 227, 228, 539	6 /	600 mg/kg	Note 44
SUNSET YELLOW FCF	110	6 /	GMP	
TARA GUM	417	6 /	GMP	

TARTRAZINE	102	6 /		GMP	
THAUMATIN	957	3 /		GMP	
TRAGACANTH GUM	413	6 /		2000 mg/kg	
XANTHAN GUM	415	6 /		5000 mg/kg	

Food Category No. 14.1.2.3 Concentrates for fruit juice

Additive	INS	Step/Yr	Max		Comments
ACESULFAME POTASSIUM	950	3 /		3000 mg/kg	Note 14
ACETYLATED DISTARCH ADIPATE	1422	3 /		GMP	
ACETYLATED DISTARCH PHOSPHATE	1414	3 /		GMP	
ACID TREATED STARCH	1401	3 /		GMP	
AGAR	406	6 /		GMP	
ALKALINE TREATED STARCH	1402	3 /		GMP	
ALLURA RED AC	129	6 /		300 mg/kg	
AMARANTH	123	6 /		300 mg/kg	
ANNATTO EXTRACTS	160b	6 /		GMP	
ASCORBIC ACID	300	6 /		300 mg/kg	
BLEACHED STARCH	1403	3 /		GMP	
BRILLIANT BLUE FCF	133	6 /		100 mg/kg	
CALCIUM ASCORBATE	302	6 /		300 mg/kg	
CARAMEL COLOUR, CLASS I	150a	6 /		GMP	
CARAMEL COLOUR, CLASS II	150b	3 /		GMP	
CARBON DIOXIDE	290	6 /	3000	mg/kg	Notes 59 & 69
CAROB BEAN GUM	410	6 /		GMP	
CAROTENOIDS	160ai,e,f	6 /		35 mg/kg	
CARRAGEENAN	407	6 /		GMP	
CITRIC ACID	330	6 /		GMP	
DEXTRINS, WHITE AND YELLOW, ROASTED STARCH	1400	3 /		GMP	
DISTARCH PHOSPHATE	1412	3 /		GMP	
ENZYME TREATED STARCH	1405	3 /		GMP	
ERYTHRITOL	968	3 /		20000 mg/kg	
ERYTHROSINE	127	6 /		300 mg/kg	
GELLAN GUM	418	6 /		GMP	
GUAR GUM	412	6 /		GMP	
GUM ARABIC	414	6 /		GMP	
HYDROXYPROPYL STARCH	1440	3 /		GMP	
INDIGOTINE	132	6 /		300 mg/kg	
ISOMALT	953	3 /		30000 mg/kg	
KARAYA GUM	416	6 /		GMP	
KONJAC FLOUR	425	6 /		GMP	
LACTIC AND FATTY ACID ESTERS OF GLYCEROL	472b	6 /		GMP	
MALIC ACID (DL-)	296	6 /		GMP	
MALTITOL and MALTITOL SYRUP	965	3 /		20000 mg/kg	
MICROCRYSTALLINE CELLULOSE	460i	6 /		GMP	
MONOSTARCH PHOSPHATE	1410	3 /		GMP	
NITROUS OXIDE	942	6 /		GMP	
OXIDIZED STARCH	1404	3 /		GMP	
PECTINS (AMIDATED AND NON-AMIDATED)	440	6 /		3000 mg/kg	
PHOSPHATED DISTARCH PHOSPHATE	1413	3 /		GMP	
POWDERED CELLULOSE	460ii	6 /		GMP	
PROCESSED EUCHEUMA SEAWEED	407a	3 /		GMP	

PROPYLENE GLYCOL ALGINATE	405	3 /	GMP	
RIBOFLAVINES	101i,ii	6 /	GMP	
SACCHARIN	954	6 /	300 mg/kg	
SODIUM ALGINATE	401	3 /	GMP	
SODIUM ASCORBATE	301	6 /	300 mg/kg	
SODIUM CARBOXYMETHYL CELLULOSE	466	3 /	GMP	
SORBITOL (INCLUDING SORBITOL SYRUP)	420	3 /	14000 mg/kg	
SUCRALOSE	955	6 /	1250 mg/kg	
SUCRALOSE	955	3 /	1500 mg/kg	
SULPHITES	220-225, 227, 228, 539	6 /	500 mg/kg	Notes 44 & 107
SUNSET YELLOW FCF	110	6 /	300 mg/kg	
TARA GUM	417	6 /	GMP	
TARTRAZINE	102	6 /	300 mg/kg	
TRAGACANTH GUM	413	6 /	GMP	
XANTHAN GUM	415	6 /	GMP	

Food Category No. 14.1.3 Fruit and vegetable nectars

Additive	INS	Step/Yr	Max	Comments
ASPARTAME	951	6 /	2000 mg/kg	
HYDROXYBENZOATES, p-	214, 216,	6 /	200 mg/kg	Note 27
PHOSPHATES	338; 339i-iii; 340i-iii; 341i-iii; 342i,ii; 343ii,iii; 450i,iii,v,vi ; 451i,ii; 452i,ii,iv,v;	6 /	2500 mg/kg	Notes 33 & 88
POLYDIMETHYLSILOXANE	900a	6 /	50 mg/kg	

Food Category No. 14.1.3.1 Fruit nectar

Additive	INS	Step/Yr	Max	Comments
ACESULFAME POTASSIUM	950	6 /	500 mg/kg	
AGAR	406	6 /	GMP	
ANNATTO EXTRACTS	160b	6 /	GMP	
ASCORBIC ACID	300	6 /	500 mg/kg	
BEET RED	162	6 /	GMP	
CANTHAXANTHIN	161g	6 /	5 mg/kg	
CARBON DIOXIDE	290	6 /	3000 mg/kg	Notes 59 & 69
CARMINES	120	6 /	100 mg/kg	
CAROB BEAN GUM	410	6 /	GMP	
CARRAGEENAN	407	6 /	1000 mg/kg	
CHLOROPHYLLS	140	6 /	GMP	
CHLOROPHYLLS, COPPER COMPLEXES	141i,ii	6 /	GMP	
CURCUMIN	100i	6 /	100 mg/kg	
CYCLAMATES	952	6 /	1000 mg/kg	Note 17
ERYTHORBIC ACID	315	6 /	GMP	
GELLAN GUM	418	6 /	GMP	
GUAR GUM	412	6 /	GMP	
GUM ARABIC	414	6 /	GMP	
HYDROXYPROPYL DISTARCH PHOSPHATE	1442	3 /	GMP	
ISOMALT	953	3 /	30000 mg/kg	
KARAYA GUM	416	6 /	GMP	

KONJAC FLOUR	425	6 /	GMP	
MALIC ACID (DL-)	296	6 /	3000 mg/kg	
MICROCRYSTALLINE CELLULOSE	460i	6 /	GMP	
PECTINS (AMIDATED AND NON-AMIDATED)	440	6 /	3000 mg/kg	
POWDERED CELLULOSE	460ii	6 /	GMP	
PROCESSED EUCHEUMA SEAWEED	407a	3 /	GMP	
PROPYLENE GLYCOL	1520	3 /	GMP	
PROPYLENE GLYCOL ALGINATE	405	3 /	GMP	
RIBOFLAVINES	101i,ii	6 /	GMP	
SODIUM ALGINATE	401	3 /	GMP	
SODIUM ASCORBATE	301	6 /	200 mg/kg	
SODIUM CARBOXYMETHYL CELLULOSE	466	6 /	5000 mg/kg	
SODIUM ERYTHORBATE	316	6 /	GMP	
SORBATES	200-203	6 /	2000 mg/kg	Note 42
STARCH ACETATE	1420	3 /	GMP	
STARCH SODIUM OCTENYL SUCCINATE	1450	3 /	GMP	
SUCRALOSE	955	6 /	250 mg/kg	
TARA GUM	417	6 /	GMP	
TARTRATES	334; 335i,ii; 336i,ii; 337	6 /	3000 mg/kg	Note 45
TRAGACANTH GUM	413	6 /	GMP	
XANTHAN GUM	415	6 /	3000 mg/kg	

Food Category No. 14.1.3.3 Concentrates for fruit nectar

Additive	INS	Step/Yr	Max	Comments
ACESULFAME POTASSIUM	950	3 /	2500 mg/kg	Note 14
AGAR	406	6 /	GMP	
ASCORBIC ACID	300	6 /	300 mg/kg	
CALCIUM ASCORBATE	302	6 /	300 mg/kg	
CANTHAXANTHIN	161g	6 /	5 mg/kg	
CARBON DIOXIDE	290	6 /	3000 mg/kg	Notes 59 & 69
CAROB BEAN GUM	410	6 /	GMP	
CAROTENES, VEGETABLE	160aii	3 /	GMP	
CARRAGEENAN	407	6 /	GMP	
GELLAN GUM	418	6 /	GMP	
GUAR GUM	412	6 /	GMP	
GUM ARABIC	414	6 /	GMP	
ISOMALT	953	3 /	30000 mg/kg	
KARAYA GUM	416	6 /	GMP	
KONJAC FLOUR	425	6 /	GMP	
MALIC ACID (DL-)	296	6 /	3000 mg/kg	
MICROCRYSTALLINE CELLULOSE	460i	6 /	GMP	
PECTINS (AMIDATED AND NON-AMIDATED)	440	6 /	3000 mg/kg	
POWDERED CELLULOSE	460ii	6 /	GMP	
PROCESSED EUCHEUMA SEAWEED	407a	3 /	GMP	
PROPYLENE GLYCOL ALGINATE	405	3 /	GMP	
SACCHARIN	954	6 /	300 mg/kg	
SODIUM ALGINATE	401	3 /	GMP	
SODIUM ASCORBATE	301	6 /	300 mg/kg	

SODIUM CARBOXYMETHYL CELLULOSE	466	3 /	GMP		
SUCRALOSE	955	6 /	1250	mg/kg	
SUCRALOSE	955	3 /	1500	mg/kg	
SULPHITES	220-225, 227, 228, 539	6 /	70	mg/kg	Note 44
TARA GUM	417	6 /	GMP		
TARTRATES	334; 335i,ii; 336i,ii; 337	6 /	3000	mg/kg	Note 45
TARTRAZINE	102	6 /	300	mg/kg	
TRAGACANTH GUM	413	6 /	GMP		
XANTHAN GUM	415	6 /	GMP		

Notes to the Comments for the Revised Draft General Standard for Food Additives (36th CCFAC)

Note 1:	As adipic acid
Note 2:	On dry ingredient, dry weight, dry mix or concentrate basis.
Note 3:	Surface treatment.
Note 4:	For decoration, stamping, marking or branding the product.
Note 5:	Used in raw materials for manufacture of the finished food.
Note 6:	As aluminium.
Note 7:	Use level not in finished food.
Note 8:	As bixin.
Note 9:	As total bixin or norbixin.
Note 10:	As ascorbyl stearate.
Note 11:	Flour basis.
Note 12:	Carryover from flavouring substances.
Note 13:	As benzoic acid.
Note 14:	Served at greater than 5-fold dilution.
Note 15:	Fat or oil basis.
Note 16:	For use in glaze, coatings or decorations for fruit, vegetables, meat or fish.
Note 17:	As cyclamic acid.
Note 18:	Added level; residue not detected in ready-to-eat food.
Note 19:	Used in cocoa fat; use level on ready-to-eat basis.
Note 20:	On total amount of stabilizers, thickeners and/or gums.
Note 21:	As anhydrous calcium disodium EDTA.
Note 22:	For use in smoked fish products only.
Note 23:	As iron.
Note 24:	As anhydrous sodium ferrocyanide.
Note 25:	As formic acid.
Note 26:	For use in baking powder only.
Note 27:	As p-hydroxybenzoic acid.
Note 28:	ADI conversion: if a typical preparation contains 0.025 µg/U, then the ADI of 33,000 U/kg bw becomes: [(33000 U/kg bw) x (0.025 µg/U) x (1 mg/1000 µg)] = 0.825 mg/kg bw
Note 29:	Reporting basis not specified.
Note 30:	As residual NO3 ion.
Note 31:	Of the mash used.
Note 32:	As residual NO2 ion.
Note 33:	As phosphorus.
Note 34:	Anhydrous basis.
Note 35:	Except for use in special formula at 20,000 mg/kg.
Note 36:	Residual level.
Note 37:	As weight of nonfat milk solids.
Note 38:	Level in creaming mixture.
Note 39:	Only when product contains butter or other fats and oils.
Note 40:	Except for use in special formula at 200 mg/kg.
Note 41:	Use in breading or batter coatings only.
Note 42:	As sorbic acid
Note 43:	As tin.
Note 44:	As residual SO2.
Note 45:	As tartaric acid.
Note 46:	As thiodipropionic acid.
Note 47:	On egg yolk weight, dry basis.
Note 48:	For olives only.
Note 49:	For use on citrus fruits only.
Note 50:	For use in fish roe only.
Note 51:	For use in herbs and salt substitutes only.
Note 52:	For use in butter only.
Note 53:	For use in coatings only.
Note 54:	Except for use in special formula at 1200 mg/kg.
Note 55:	Added level.
Note 56:	Provided starch is not present.
Note 57:	GMP is 1 part benzoyl peroxide and not more than 6 parts of the subject additive by
Note 58:	As calcium.
Note 59:	Use as packing gas.
Note 60:	If used as a carbonating agent, the CO2 in the finished wine shall not exceed 39.2 mg/kg.
Note 61:	For use in minced fish only.
Note 62:	As copper.
Note 63:	On amount of dairy ingredients.
Note 64:	Level added to dry beans; 200 mg/kg in ready-to-eat food, anhydrous basis.
Note 65:	Carryover from nutrient preparations.
Note 66:	As formaldehyde. For use in provolone cheese only.

Note 67:	Except for use in liquid egg whites at 8800 mg/kg as phosphorus, and in liquid whole eggs at 14,700 mg/kg as phosphorus.
Note 68:	For use in natural mineral waters only.
Note 69:	Use as carbonating agent.
Note 70:	As the acid.
Note 71:	Calcium, potassium and sodium salts only.
Note 72:	Ready-to-eat basis.
Note 73:	Except whole fish.
Note 74:	Use level for deep orange coloured cheeses; 25 mg/kg for orange coloured cheeses; 10 mg/kg for normal coloured cheeses.
Note 75:	Use in milk powder for vending machines only.
Note 76:	Use in potatoes only.
Note 77:	As mono-isopropyl citrate.
Note 78:	For use in tocino (fresh, cured sausage) only.
Note 79:	For use on nuts only.
Note 80:	Equivalent to 2 mg/dm2 surface application to a maximum depth of 5 mm.
Note 81:	Equivalent to 1 mg/dm2 surface application to a maximum depth of 5 mm.
Note 82:	For use in shrimp; 6000 mg/kg for Crangon crangon and Crangon vulgaris.
Note 83:	For use in sauce only.
Note 84:	For use in special formula at 10,000 mg/kg.
Note 85:	Excluding use in surimi and fish roe products at 500 mg/kg.
Note 86:	Use in whipped dessert toppings other than cream only.
Note 87:	Treatment level.
Note 88:	Carryover from the ingredient.
Note 89:	Except for use in dried tangle (KONBU) at 150 mg/kg.
Note 90:	For use in milk-sucrose mixtures used in the finished product.
Note 91:	For use in special formula only.
Note 92:	On the weight of the protein before re-hydration.
Note 93:	Except natural wine produced from Vitis Vinifera grapes.
Note 94:	For use in loganiza (fresh, uncured sausage) only.
Note 95:	For use in surimi and fish roe products only.
Note 96:	Carryover from use in fats.
Note 97:	In cocoa and chocolate products.
Note 98:	For dust control.
Note 99:	For use in fish fillets and minced fish only.
Note 100:	For use as a dispersing agent in dill oil used in the final food.
Note 101:	Level based on the maximum recommended daily dose of 475 mg/dose, assuming one 600 mg tablet is consumed per day.
Note 102:	For use as a surfactant or wetting agent for colours in the food.
Note 103:	Except for use in special white wines at 400 mg/kg.
Note 104:	Maximum 5000 mg/kg residue in bread and yeast-leavened bakery products.
Note 105:	Except for use in dried gourd strips (KAMPYO) at 5000 mg/kg.
Note 106:	Except for use in Dijon mustard at 500 mg/kg.
Note 107:	Except for use in concentrated grape juice for home wine making at 2000 mg/kg.
Note 108:	For use on coffee beans only.
Note 109:	Use level reported as 25 lbs/1000 gal x (0.45 kg/lb) x (1 gal/3.75 L) x (1 L/kg) x (106mg/kg) = 3000 mg/kg
Note 110:	For use in frozen French fried potatoes only.
Note 111:	For use in dipping solution only.
Note 112:	For use in grated cheese only.
Note 113:	Excluding butter.
Note 114:	Excluding cocoa powder.
Note 115:	Except for use in special formula at 12,000 mg/kg.
Note 116:	For use in doughs only.
Note 117:	Except for use in loganiza (fresh, uncured sausage) at 1000 mg/kg.
Note 118:	Except for use in tocino (fresh, cured sausage) at 1000 mg/kg.
Note 119:	As carrier for flavours.
Note 120:	Except for use in caviar at 2500 mg/kg.
Note 121:	Excluding fermented fish products at 1000 mg/kg.
Note 122:	Subject to national legislation of importing country.
Note 123:	1000 mg/kg for beverages with pH greater than 3.5
Note 124:	Only for products containing less than 7% ethanol.
Note 125:	For use as a release agent for baking pans in a mixture with vegetable oil.
Note 126:	For releasing dough in dividing or baking only.
Note 127:	As served to the consumer.
Note 128:	For use in pineapple juice only.
Note 129:	INS 334 only.
Note 130:	For use as an acidity regulator in grape juice.

Note 131:	Sulphites should be used only in bulk dispensers and certain tropical juices.
Note 132:	INS 451i only, to enhance the effectiveness of benzoates and sorbates.
Note 133:	For use in cloudy juices only.

CODEX GENERAL STANDARD FOR FOOD ADDITIVES
(CODEX STAN 192-1995, Rev. 4-2003)

DRAFT (STEP 6) AND PROPOSED DRAFT (STEP 3) FOOD ADDITIVE PROVISIONS REQUIRING ADDITIONAL INFORMATION

BEESWAX, WHITE AND YELLOW

Beeswax, White and Yellow INS: 901

Function: Bulking Agent, Glazing Agent, Release Agent, Stabilizer

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	200 mg/kg		6	

CANDELILLA WAX

Candelilla Wax INS: 902

Function: Bulking Agent, Carrier Solvent, Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	200 mg/kg		6	

CARNAUBA WAX

Carnauba Wax INS: 903

Function: Anticaking Agent, Adjuvant, Bulking Agent, Carrier Solvent, Glazing Agent, Release Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
05.4	Decorations (e.g., for fine bakery wares), toppings (non-fruit) and sweet sauces	10000 mg/kg		6	
12.6	Sauces and like products	GMP		6	

BENZOATES

Benzoic Acid INS: 210 Sodium Benzoate INS: 211

Potassium Benzoate INS: 212 Calcium Benzoate INS: 213

Function: Preservative

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
04.1.2.5	Jams, jellies and marmelades	1500 mg/kg	Note 13	3	
05.3	Chewing gum	1500 mg/kg	Note 13	6	
08.2.1.2	Cured (including salted) and dried non-heat treated processed meat, poultry, and game products in whole pieces or cuts	GMP	Notes 3 & 13	6	
08.3.1.2	Cured (including salted) and dried non-heat treated processed comminuted meat, poultry, and game	1000 mg/kg	Note 13	6	
08.3.2	Heat-treated processed comminuted meat, poultry, and game products	1000 mg/kg	Note 13	3	
12.5.1	Ready-to-eat soups and broths, including canned, bottled, and frozen	1000 mg/kg	Note 13	6	
14.1.1.2	Table waters and soda waters	200 mg/kg	Note 13	6	

STEARYL TARTRATE

Stearyl Tartrate INS: 483

Function: Emulsifier, Flour Treatment Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
01.7	Dairy-based desserts (e.g., pudding, fruit or flavoured yoghurt)	5000 mg/kg		6	
02.4	Fat-based desserts excluding dairy-based dessert products of food category 01.7	5000 mg/kg		6	
04.1.2.9	Fruit-based desserts, including fruit-flavoured water-based desserts	5000 mg/kg		6	
04.2.2.6	Vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed pulps and preparations (e.g., vegetable desserts and sauces, candied vegetables) other than food category 04.2.2.5	5000 mg/kg		6	
06.5	Cereal and starch based desserts (e.g., rice pudding, tapioca pudding)	5000 mg/kg		6	
07.0	Bakery wares	4000 mg/kg		6	
10.4	Egg-based desserts (e.g., custard)	5000 mg/kg		6	

QUILLAIA EXTRACT

Quillaia Extract INS: 999

Function: Foaming Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
14.1.4	Water-based flavoured drinks, including "sport," "energy," or "electrolyte" drinks and particulated drinks	500 mg/kg		6	

GLYCEROL ESTER OF WOOD ROSIN

Glycerol Ester of Wood Rosin INS: 445

Function: Adjuvant, Bulking Agent, Emulsifier, Stabilizer, Thickener

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
04.1.1.2	Surface-treated fresh fruit	5 mg/kg		3	
04.2.1.2	Surface-treated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds	5 mg/kg		3	

POLYDIMETHYLSILOXANE

Polydimethylsiloxane INS: 900a

Function: Anticaking Agent, Antifoaming Agent

Food Cat. No.	Food Category	Max Level	Comments	Step	Year
01.7	Dairy-based desserts (e.g., pudding, fruit or flavoured yoghurt)	50 mg/kg		6	
03.0	Edible ices, including sherbet and sorbet	50 mg/kg		6	
04.1.2.11	Fruit fillings for pastries	50 mg/kg		6	
05.4	Decorations (e.g., for fine bakery wares), toppings (non-fruit) and sweet sauces	50 mg/kg		6	
07.0	Bakery wares	10 mg/kg	Notes 3 & 36	6	
08.2	Processed meat, poultry, and game products in whole pieces or cuts	50 mg/kg		6	
08.3	Processed comminuted meat, poultry, and game products	50 mg/kg		6	
09.2	Processed fish and fish products, including mollusks, crustaceans, and echinoderms	50 mg/kg		6	
10.2	Egg products	50 mg/kg		6	

10.3	Preserved eggs, including alkaline, salted, and canned eggs	50	mg/kg		6
10.4	Egg-based desserts (e.g., custard)	50	mg/kg		6
11.3	Sugar solutions and syrups, also (partially) inverted, including treacle and molasses, excluding products of food category 11.1.3	10	mg/kg		6
11.4	Other sugars and syrups (e.g., xylose, maple syrup, sugar toppings)	50	mg/kg		6
11.6	Table-top sweeteners, including those containing high-intensity sweeteners	50	mg/kg		6
12.2	Herbs, spices, seasonings and condiments (e.g., seasoning for instant noodles)	50	mg/kg		6
12.6.1	Emulsified sauces (e.g., mayonnaise, salad dressing)	50	mg/kg		6
12.6.2	Non-emulsified sauces (e.g., ketchup, cheese sauce, cream sauce, brown gravy)	10	mg/kg		6
12.6.3	Mixes for sauces and gravies	10	mg/kg		6
12.6.4	Clear sauces (e.g., fish sauce)	50	mg/kg		6
12.8	Yeast and like products	50	mg/kg		6
14.1.5	Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa	50	mg/kg		6
14.2.2	Cider and perry	50	mg/kg		6
14.2.6	Distilled spirituous beverages containing more than 15% alcohol	50	mg/kg		6

POLYVINYLPYRROLIDONE

Polyvinylpyrrolidone INS: 1201

Function: Adjuvant, Emulsifier, Glazing Agent, Stabilizer, Thickener

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
14.2.3	Grape wines	60	mg/kg	Note 36	6	

MICROCRYSTALLINE WAX

Microcrystalline Wax INS: 905ci

Function: Antifoaming Agent, Bulking Agent, Glazing Agent

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
05.1.4	Cocoa and chocolate products	10000	mg/kg		6	
05.1.5	Imitation chocolate, chocolate substitute products	10000	mg/kg		6	
05.2	Confectionery including hard and soft candy, nougat, etc. other than food categories 05.1, 05.3 and 05.4	10000	mg/kg		6	
05.4	Decorations (e.g., for fine bakery wares), toppings (non-fruit) and sweet sauces	10000	mg/kg		6	

PROPYLENE GLYCOL ESTERS OF FATTY ACIDS

Propylene Glycol Esters of Fatty Acids INS: 477

Function: Emulsifier, Stabilizer

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
02.4	Fat-based desserts excluding dairy-based dessert products of food category 01.7	40000	mg/kg		6	

ISOPROPYL CITRATES

Isopropyl Citrates INS: 384

Function: Antioxidant, Preservative, Sequestrant

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
02.1.2	Vegetable oils and fats	200	mg/kg		6	

EDTAs

Calcium Disodium Ethylene Diamine Tetra Acetate INS: 385 Disodium Ethylene Diamine Tetra Acetate INS: 386

Function: Antioxidant, Preservative, Sequestrant

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
04.1.2.8	Fruit preparations, including pulp, purees, fruit toppings and coconut milk	650	mg/kg	Note 21	6	
04.2.2.1	Frozen vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweeds, and nuts and seeds	250	mg/kg	Notes 21 & 110	6	
09.2.4.1	Cooked fish and fish products	50	mg/kg	Note 21	6	
11.6	Table-top sweeteners, including those containing high-intensity sweeteners	1000	mg/kg	Note 21	6	
12.6.3	Mixes for sauces and gravies	75	mg/kg	Note 21	6	
12.6.4	Clear sauces (e.g., fish sauce)	75	mg/kg	Note 21	6	
14.2.2	Cider and perry	25	mg/kg	Note 21	6	
14.2.3	Grape wines	25	mg/kg	Note 21	6	
14.2.4	Wines (other than grape)	25	mg/kg	Note 21	6	
14.2.5	Mead	25	mg/kg	Note 21	6	
14.2.6	Distilled spirituous beverages containing more than 15% alcohol	25	mg/kg	Note 21	6	

GALLATE, PROPYL

Gallate, Propyl INS: 310

Function: Antioxidant

Food Cat. No.	Food Category	Max Level		Comments	Step	Year
04.2.2.5	Vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed purees and spreads (e.g., peanut	200	mg/kg	Note 15	6	
06.4.2	Dried pastas and noodles and like products	200	mg/kg		3	
06.4.3	Pre-cooked pastas and noodles and like products	200	mg/kg		3	
07.0	Bakery wares	1000	mg/kg	Notes 15 & 96	6	
09.2.1	Frozen fish, fish fillets, and fish products, including mollusks, crustaceans, and echinoderms	1000	mg/kg	Note 111	6	
12.5	Soups and broths	200	mg/kg	Note 15	6	

Notes to the Comments for the Revised Draft General Standard for Food Additives (36th CCFAC)

Note 1: As adipic acid
Note 2: On dry ingredient, dry weight, dry mix or concentrate basis.
Note 3: Surface treatment.
Note 4: For decoration, stamping, marking or branding the product.
Note 5: Used in raw materials for manufacture of the finished food.
Note 6: As aluminium.
Note 7: Use level not in finished food.
Note 8: As bixin.
Note 9: As total bixin or norbixin.
Note 10: As ascorbyl stearate.
Note 11: Flour basis.
Note 12: Carryover from flavouring substances.
Note 13: As benzoic acid.
Note 14: Served at greater than 5-fold dilution.
Note 15: Fat or oil basis.
Note 16: For use in glaze, coatings or decorations for fruit, vegetables, meat or fish.
Note 17: As cyclamic acid.
Note 18: Added level; residue not detected in ready-to-eat food.
Note 19: Used in cocoa fat; use level on ready-to-eat basis.
Note 20: On total amount of stabilizers, thickeners and/or gums.
Note 21: As anhydrous calcium disodium EDTA.
Note 22: For use in smoked fish products only.
Note 23: As iron.
Note 24: As anhydrous sodium ferrocyanide.
Note 25: As formic acid.
Note 26: For use in baking powder only.
Note 27: As p-hydroxybenzoic acid.
Note 28: ADI conversion: if a typical preparation contains 0.025 µg/U, then the ADI of 33,000 U/kg bw becomes: [(33000 U/kg bw) x (0.025 µg/U) x (1 mg/1000 µg)] = 0.825 mg/kg bw
Note 29: Reporting basis not specified.
Note 30: As residual NO3 ion.
Note 31: Of the mash used.
Note 32: As residual NO2 ion.
Note 33: As phosphorus.
Note 34: Anhydrous basis.
Note 35: Except for use in special formula at 20,000 mg/kg.
Note 36: Residual level.
Note 37: As weight of nonfat milk solids.
Note 38: Level in creaming mixture.
Note 39: Only when product contains butter or other fats and oils.
Note 40: Except for use in special formula at 200 mg/kg.
Note 41: Use in breading or batter coatings only.
Note 42: As sorbic acid
Note 43: As tin.
Note 44: As residual SO2.
Note 45: As tartaric acid.
Note 46: As thiodipropionic acid.
Note 47: On egg yolk weight, dry basis.
Note 48: For olives only.
Note 49: For use on citrus fruits only.
Note 50: For use in fish roe only.
Note 51: For use in herbs and salt substitutes only.
Note 52: For use in butter only.
Note 53: For use in coatings only.
Note 54: Except for use in special formula at 1200 mg/kg.
Note 55: Added level.
Note 56: Provided starch is not present.
Note 57: GMP is 1 part benzoyl peroxide and not more than 6 parts of the subject additive by
Note 58: As calcium.
Note 59: Use as packing gas.
Note 60: If used as a carbonating agent, the CO2 in the finished wine shall not exceed 39.2 mg/kg.
Note 61: For use in minced fish only.
Note 62: As copper.
Note 63: On amount of dairy ingredients.
Note 64: Level added to dry beans; 200 mg/kg in ready-to-eat food, anhydrous basis.

Note 65: Carryover from nutrient preparations.
Note 66: As formaldehyde. For use in provolone cheese only.
Note 67: Except for use in liquid egg whites at 8800 mg/kg as phosphorus, and in liquid whole eggs at 14,700 mg/kg as phosphorus.
Note 68: For use in natural mineral waters only.
Note 69: Use as carbonating agent.
Note 70: As the acid.
Note 71: Calcium, potassium and sodium salts only.
Note 72: Ready-to-eat basis.
Note 73: Except whole fish.
Note 74: Use level for deep orange coloured cheeses; 25 mg/kg for orange coloured cheeses; 10 mg/kg for normal coloured cheeses.
Note 75: Use in milk powder for vending machines only.
Note 76: Use in potatoes only.
Note 77: As mono-isopropyl citrate.
Note 78: For use in tocino (fresh, cured sausage) only.
Note 79: For use on nuts only.
Note 80: Equivalent to 2 mg/dm2 surface application to a maximum depth of 5 mm.
Note 81: Equivalent to 1 mg/dm2 surface application to a maximum depth of 5 mm.
Note 82: For use in shrimp; 6000 mg/kg for Crangon crangon and Crangon vulgaris.
Note 83: For use in sauce only.
Note 84: For use in special formula at 10,000 mg/kg.
Note 85: Excluding use in surimi and fish roe products at 500 mg/kg.
Note 86: Use in whipped dessert toppings other than cream only.
Note 87: Treatment level.
Note 88: Carryover from the ingredient.
Note 89: Except for use in dried tangle (KONBU) at 150 mg/kg.
Note 90: For use in milk-sucrose mixtures used in the finished product.
Note 91: For use in special formula only.
Note 92: On the weight of the protein before re-hydration.
Note 93: Except natural wine produced from Vitis Vinifera grapes.
Note 94: For use in loganiza (fresh, uncured sausage) only.
Note 95: For use in surimi and fish roe products only.
Note 96: Carryover from use in fats.
Note 97: In cocoa and chocolate products.
Note 98: For dust control.
Note 99: For use in fish fillets and minced fish only.
Note 100: For use as a dispersing agent in dill oil used in the final food.
Note 101: Level based on the maximum recommended daily dose of 475 mg/dose, assuming one 600 mg tablet is consumed per day.
Note 102: For use as a surfactant or wetting agent for colours in the food.
Note 103: Except for use in special white wines at 400 mg/kg.
Note 104: Maximum 5000 mg/kg residue in bread and yeast-leavened bakery products.
Note 105: Except for use in dried gourd strips (KAMPYO) at 5000 mg/kg.
Note 106: Except for use in Dijon mustard at 500 mg/kg.
Note 107: Except for use in concentrated grape juice for home wine making at 2000 mg/kg.
Note 108: For use on coffee beans only.
Note 109: Use level reported as 25 lbs/1000 gal x (0.45 kg/lb) x (1 gal/3.75 L) x (1 L/kg) x (106mg/kg) = 3000 mg/kg
Note 110: For use in frozen French fried potatoes only.
Note 111: For use in dipping solution only.
Note 112: For use in grated cheese only.
Note 113: Excluding butter.
Note 114: Excluding cocoa powder.
Note 115: Except for use in special formula at 12,000 mg/kg.
Note 116: For use in doughs only.
Note 117: Except for use in loganiza (fresh, uncured sausage) at 1000 mg/kg.
Note 118: Except for use in tocino (fresh, cured sausage) at 1000 mg/kg.
Note 119: As carrier for flavours.
Note 120: Except for use in caviar at 2500 mg/kg.

PRIORITY LIST OF MAXIMUM LEVELS FOR FOOD ADDITIVES FOR REVIEW BY THE CCFAC ELECTRONIC WORKING GROUP

INS No.	Additive
903	Carnauba Wax
210, 211, 212, 213	Benzoates
483	Stearyl Tartrate
999	Quillaia Extract
445	Glycerol Ester of Wood Rosin
900a	Polydimethylsiloxane
1201	Polyvinylpyrrolidone
905ci	Microcrystalline Wax
512	Stannous Chloride
477	Propylene Glycol Esters of Fatty Acids
384	Isopropyl Citrates
385, 386	EDTAs
310	Gallate, Propyl
304, 305	Ascorbyl Esters
320	Butylated Hydroxyanisole (BHA)
321	Butylated Hydroxytoluene (BHT)
319	Tertiary Butylhydroxyquinone (TBHQ)
472e	Diacetyltartaric and Fatty Acid Esters of Glycerol (DATEM)
472f	Tartaric, Acetic & Fatty Acid Esters of Glycerol (Mixed)
220, 221, 222, 223, 224, 225, 227, 228, 539	Sulfites
161g	Canthaxanthin
127	Erythrosine
172i, 172ii, 172iii	Iron Oxides
133	Brilliant Blue FCF
120	Carmines
160aii	Carotenes, Vegetable
1503	Castor Oil
141i & 141ii	Chlorophylls, Copper Complexes
163ii	Grape Skin Extract
432,433, 434, 435, 436	Polysorbates
101i, 101ii	Riboflavines
904	Shellac
541i, 541ii	Sodium Aluminum Phosphates

SPECIFICATIONS FOR THE IDENTITY AND PURITY OF FOOD ADDITIVES ARISING FROM THE 61st JECFA MEETING

(AT STEP 5/8 OF THE PROCEDURE)

Note: Food additive specifications assigned to Categories III, IV and V are included in the Report of the Working Group on Specifications (Conference Room Document 2)

CATEGORY I (RECOMMENDED TO THE COMMISSION FOR ADOPTION)

Food additives (13 substances)

- *alph*a-Amylase from *Bacillus licheniformis* (thermostable) containing a modified *alph*a-amylase gene from *B. licheniformis*
- *bet*a-Carotene from *Blakeslea trispora*
- Cross-linked sodium carboxymethyl cellulose
- Curcumin
- Magnesium silicate (synthetic)
- Mixed Xylanase, *bet*a-glucanase enzyme preparation, produced by a strain of *Humicola insolens*
- Natamycin
- Neotame
- Quillaia extract (Type 1)
- Quillaia extract (Type 2)
- D-Tagatose
- Talc
- Xylanase from *Thermomyces lanuginosus* expressed in *Fusarium venenatum*

Arsenic and heavy metals limits for certain food additives (deletion of Heavy Metals (as Lead) specification and new limits (mg/kg) for arsenic and lead (33 substances)

Additive name	INS	As	Pb	Additive name	INS	As	Pb
Activated carbon	-	3	5	Lecithin	322	-	2
Aluminium potassium sulfate	522	-	5	Octyl gallate	311	-	2
Aluminium sulfate (anhydrous)	520	-	5	Polydimethylsiloxane	900	-	1
Ascorbic acid	300	-	2	Potassium lactate (solution)	326	-	2
				Potassium polyphosphates	452(ii)	3	4
Bone phosphate	542	3	2	Propyl gallate	310	-	2
Butylated hydroxyanisole (BHA)	320	-	2	Sodium aluminium phosphate, acidic	541(i)	3	2
Calcium ascorbate	302	-	2	Sodium erythorbate	316	-	2
Calcium disodium ethylene-diaminetetraacetate	385	-	2	Sodium lactate (solution)	325	-	2
Cupric sulphate	519	-	10	Stannous chloride	512	-	2
Dilauryl-thiodipropionate	389	-	2	Sucrose acetate isobutyrate	444	-	2
Disodium ethylene-diaminetetraacetate	386	-	2	*Tertiary*-butylhydroquinone	319	-	2
Dodecyl gallate	312	-	2	Thiodipropionic acid	388	-	2
Erythorbic acid	315	-	2	Tocopherol concentrate, mixed	307b	-	2
Ethyl protocatechuate	-	-	2	Tocopherol concentrate, d-alpha-	307a	-	2
Ferrous lactate	585	-	1	Tocopherol, dl-alpha	307c	-	2
Isopropyl citrate mixture	384	-	2	Triethyl citrate	1505	-	2

Flavouring agents (225 substances)

42	Isoamyl formate
54	Geranyl formate
56	Rhodinyl formate
57	Citronellyl acetate
60	Rhodinyl acetate
61	Citronellyl propionate
62	Geranyl propionate
65	Citronellyl butyrate
66	Geranyl butyrate
71	Citronellyl isobutyrate
73	Neryl isobutyrate
95	Heptanal
98	Octanal
101	Nonanal
104	Decanal
107	Undecanal
110	Lauric aldehyde
112	Myristaldehyde
117	Propyl formate
119	n-Amyl formate
124	Isobutyl formate
170	n-Amyl heptanoate
180	Methyl laurate
205	Methyl 2-methylbutyrate
212	2-Methylbutyl 2-methylbutyrate
237	6-Hydroxy-3,7-dimethyloctanoic acid lactone
244	3-Heptyldihydro-5-methyl-2(3H)-furanone
272	3,7-Dimethyl-1-octanol
302	2,6-Dimethyl-4-heptanone
303	2,6-Dimethyl-4-heptanol
322	cis-5-Octen-1-ol
323	cis-5-Octenal
325	cis-6-Nonenal
329	9-Undecenal
332	Linoleic and linolenic acid (mixture)
337	Methyl cis-4-octenoate
338	Ethyl cis-4-octenoate
346	Methyl linoleate & Methyl linolenate (mixture)
348	2,6-Dimethyl-6-hepten-1-ol
349	2,6-Dimethyl-5-heptenal
358	Linalyl formate
360	Linalyl propionate
384	beta-Damascone
385	alpha-Damascone
396	Dehydrodihydroionone
397	Dehydrodihydroionol
409	3-Hydroxy-2-pentanone
410	2,3-Pentadione
417	2,3-Undecadione
419	Ethylcyclo-pentenolone
422	3-Ethyl-2-hydroxy-4-methylcyclopent-2-en-1-one
423	5-Ethyl-2-hydroxy-3-methylcyclopent-2-en-1-one
435	Piperitone
443	1-Menthol ethyleneglycol carbonate
465	2-Methylthioacetaldehyde
468	4-(Methylthio)butanal
470	2-(Methylthio)methyl-2-butenal
1183	2,4-Nonadien-1-ol
1184	2,6-Nonadien-1-ol
1185	2,4-Nonadienal
1186	Nona-2-trans-6-cis-dienal
1187	2-trans-6-trans-Nonadienal
1188	(E,Z)-2,6-Nonadien-1-ol acetate
1189	(E,E)-2,4-Decadien-1-ol
1190	2-trans,4-trans-Decadienal
1191	Methyl (E)-2-(Z)-4-decadienoate
1192	Ethyl trans-2-cis-4-decadienoate
1193	Ethyl 2,4,7-decatrienoate
1194	Propyl 2,4-decadienoate
1195	2,4-Undecadienal
1196	trans,trans-2,4-Dodecadienal
1197	2-trans-6-cis-Dodecadienal
1198	2-trans-4-cis-7-cis-Tridecatrienal
1199	(+/-) 2-Methyl-1-butanol
1200	3-Methyl-2-buten-1-ol
1201	2-Methyl-2-butenal
1202	3-Methyl-2-butenal
1204	3-Methylcrotonic acid
1205	trans-2-Methyl-2-butenoic acid
1206	Isobutyl 2-butenoate
1207	2-Methylallyl butyrate
1208	4-Methyl-2-pentenal
1209	2-Methyl-2-pentenal
1210	2-Methyl-2-pentenoic acid
1211	2,4-Dimethyl-2-pentenoic acid
1212	2-Methylheptanoic acid
1213	Isobutyl angelate
1214	2-Butyl-2-butenal
1215	2-Isopropyl-5-methyl-2-hexenal
1216	2-Ethyl-2-heptenal
1217	2-Methyl-2-octenal
1219	dl-Citronellol
1220	Citronellal
1221	3,7-Dimethyl-6-octenoic acid
1222	Rhodinol
1223	Geraniol
1224	Nerol
1225	Citral
1226	8-Ocimenyl acetate
1227	2,6-Dimethyl-10-methylene-2,6,11-dodecatrienal
1228	3,7,11-Trimethyl-2,6,10-dodecatrienal
1229	12-Methyltridecanal
1230	Farnesol
1231	sec-Butyl ethyl ether
1232	1-Ethoxy-3-methyl-2-butene
1233	1,4-Cineole
1234	Eucalyptol
1235	Nerol oxide
1236	2,2,6-Trimethyl-6-vinyltetrahydropyran
1237	Tetrahydro-4-methyl-2-(2-methylpropen-1-yl) pyran
1238	Theaspirane
1239	Cycloionone
1240	1,5,5,9-Tetramethyl-13-oxatricyclo(8.3.0.0(4,9))tridecane
1241	Anisole

473	Methylthiomethyl butyrate
479	Methylthiomethyl hexanoate
480	Ethyl 3-(methylthio)butyrate
488	S-Methyl 4-methylpentanethioate
489	S-Methyl hexanethioate
495	1-Methylthio-2-propanone
502	Di(butan-3-one-1-yl) sulfide
519	2-Ethylhexanethiol
548	4-Methoxy-2-methyl-2-butanethiol
556	3-Mercaptohexyl hexanoate
559	2-Keto-4-butanethiol
568	Allyl methyl disulfide
569	Methyl 1-propenyl disulfide
571	Methyl 3-methyl-1-butenyl disulfide
583	Methyl ethyl trisulfide
586	Allyl methyl trisulfide
590	Methyl 2-hydroxy-4-methylpentanoate
592	Citronelloxyacetaldehyde
603	Ethyl 2,4-dioxohexanoate
604	3-(Hydroxymethyl)-2-heptanone
625	Dibutyl sebacate
668	Linalyl cinnamate
669	Terpinyl cinnamate
704	p-Tolyl laurate
735	2-Phenylphenol
737	2,3,6-Trimethylphenol
918	Glyceryl monostearate
923	Glycerol 5-hydroxydecanoate
924	Glycerol 5-hydroxydodecanoate
937	Pyruvaldehyde
1157	4-Hydroxy-4-methyl-5-hexenoic acid gamma-lactone
1158	(+/-) 3-Methyl-gamma-decalactone
1159	4-Hydroxy-4-methyl-7-cis-decenoic acid gamma-lactone
1160	Tuberose lactone
1161	Dihydromint lactone
1162	Mint lactone
1163	Dehydromenthofurolactone
1164	(+/-)(2,6,6-Trimethyl-2-hydroxycyclohexylidene) acetic acid gamma-lactone
1165	Sclareolide
1166	Octahydrocoumarin
1167	2-(4-Methyl-2-hydroxyphenyl)propionic acid gamma-lactone
1168	3-Propylidenephthalide
1169	3-n-Butylphthalide
1170	3-Butylidenephthalide
1171	Dihydrocoumarin
1172	6-Methylcoumarin
1173	2,4-Pentadienal
1174	(E,E)-2,4-Hexadien-1-ol
1175	trans,trans-2,4-Hexadienal
1176	(E,E)-2,4-Hexadienoic acid
1177	Methyl sorbate
1178	Ethyl sorbate
1179	2,4-Heptadienal
1180	(E,E)-2,4-Octadien-1-ol
1181	trans,trans-2,4-Octadienal
1182	2-trans,6-trans-Octadienal
1242	o-Methylanisole
1243	p-Methylanisole
1244	p-Propylanisole
1245	2,4-Dimethylanisole
1246	1-Methyl-3-methoxy-4-isopropylbenzene
1247	Carvacryl ethyl ether
1248	1,2-Dimethoxybenzene
1249	m-Dimethoxybenzene
1250	p-Dimethoxybenzene
1251	3,4-Dimethoxy-1-vinylbenzene
1252	Benzyl ethyl ether
1253	Benzyl butyl ether
1254	Methyl phenethyl ether
1255	Diphenyl ether
1256	Dibenzyl ether
1257	beta-Naphthyl methyl ether
1258	beta-Naphthyl ethyl ether
1259	beta-Naphthyl isobutyl ether
1260	Isoeugenol
1261	Isoeugenyl formate
1262	Isoeugenyl acetate
1264	Propenylguaethol
1265	4-Propenyl-2,6-dimethoxyphenol
1266	Isoeugenyl methyl ether
1267	Isoeugenyl ethyl ether
1268	Isoeugenyl benzyl ether
1269	Isoprenyl acetate
1270	4-Pentenyl acetate
1271	3-Hexenal
1272	3-Hexenyl formate
1274	cis-3-Hexenyl propionate
1275	cis-3-Hexenyl isobutyrate
1276	(Z)-3-Hexenyl (E)-2-butenoate
1277	cis-3-Hexenyl tiglate
1278	cis-3-Hexenyl valerate
1279	3-Hexenyl 2-hexenoate
1280	(Z)-4-Hepten-1-ol
1281	Ethyl cis-4-heptenoate
1282	(Z)-5-Octenyl propionate
1283	(Z,Z)-3,6-Nonadien-1-ol
1284	(E)-3,(Z)-6-Nonadien-1-ol
1285	(E,Z)-3,6-Nonadien-1-ol acetate
1286	9-Decenal
1287	4-Decenoic acid
1288	cis-4-Decenyl acetate
1289	Erythro and threo-3-Mercapto-2-methylbutan-1-ol
1290	(+/-)2-Mercapto-2-methylpentan-1-ol
1292	3-Mercapto-2-methylpentanal
1293	4-Mercapto-4-methyl-2-pentanone
1294	(+/-) Ethyl 3-mercaptobutyrate
1295	Ethyl 4-(acetylthio)butyrate
1297	2-(Methylthio)ethanol
1298	Ethyl 5-(methylthio)valerate
1299	2,3,5-Trithiahexane
1300	Diisopropyl trisulfide

CATEGORY II (RECOMMENDED FOR ADOPTION AFTER EDITORIAL CHANGES, INCLUDING TECHNICAL REVISIONS)

Food Additives

None.

Flavouring agents

None.

PROPOSED DRAFT AMENDMENTS TO THE INTERNATIONAL NUMBERING SYSTEM FOR FOOD ADDITIVES

(AT STEP 5/8 OF THE PROCEDURE)

INS NUMBER	COMPOUND	TECHNOLOGICAL FUNCTION
426	Soybean hemicellulose	Emulsifier, thickener, stabilizer, anti-caking agent
466	Sodium carboxymethyl cellulose (Cellulose gum)	Thickener, stabilizer, emulsifier
468	Cross-linked sodium carboxymethyl cellulose (Cross-linked cellulose gum)	Stabilizer, binder
469	Carboxymethyl cellulose, enzymatically hydrolysed (Cellulose gum, enzymatically hydrolysed)	Thickener, stabilizer
962	Aspartame-acesulfame-salt	Sweetener
963	D-Tagatose	Sweetener
1203	Polyvinyl alcohol	Coating, binder, sealing agent, surface-finishing agent

**AMENDMENTS TO THE
CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOODS**

CODEX STAN 193-1995 (Rev. 1-1997)

The following should be deleted from the Codex General Standard for Contaminants and Toxins in Foods:

Section 1.5: Format of the Standard for Contaminants and Toxins in Foods.

The listing of the Codex standards for the different contaminants may be according to a numbering system for contaminants (see Annex IV). The Codex standards are summarized in a list of contents, and an alphabetical listing of the contaminants shall be added for easy reference.

ANNEX IV

ANNOTATED LIST OF CONTAMINANTS AND TOXINS

Introduction

In this Annex an annotated list is presented of the contaminants and toxins that are or have been dealt with in the CCFAC. It does not only encompass the contaminants and toxins for which Codex standards exist or are being developed, but also those for which further information is sought or about which a Codex decision has been taken.

The annotated list has the purpose of providing an overview of the situation regarding Codex decisions about this subject and to give guidance about further actions required. Therefore also relevant information and references are added to the list. The information shall comprise at least the current situation regarding the criteria that are important for the decision procedure of the CCFAC.

It is thus an active list, which needs to be regularly updated. In order to provide a structure for it and to facilitate the filing and retrieval of data, a number is assigned to the contaminants and toxins in the list.

The situation regarding contaminants and toxins is very complex and many substances are or have been the subject of scientific research and discussion regarding their occurrence in foods and their significance for human and animal health. On a national level, there are many activities, sometimes implying legal measures which may affect international trade in foods and feeds. It is obviously important for the CCFAC to take note of the developments in this field and to consider the necessity of actions. In order to obtain an overview of the the situation, the CCFAC shall develop and maintain a working document in which more comprehensive information regarding contaminants and toxins in foods is presented in summary form. The document shall consist of an annotated comprehensive list of contaminants and toxins (Annex IV-A), and a collection of summarized textual information to the substances on the list, with references (Annex IV-B). Annex IV-A shall be structure according to a substance categorization system, by which code numbers can be assigned to the substances on the list, to allow logical and easy filing and presentation of data. This more comprehensive list shall be the basis for the code numbers which are used in Annex IV.

DRAFT CCFAC POLICY FOR EXPOSURE ASSESSMENT OF CONTAMINANTS AND TOXINS IN FOODS OR FOOD GROUPS

(AT STEP 8 OF THE PROCEDURE)

INTRODUCTION

1. Maximum Limits (MLs) do not need to be set for all foods that contain a contaminant or a toxin. The Preamble of the Codex General Standard for Contaminants and toxins in Foods (GSCTF) states in Section 1.3.2 that "maximum levels (MLs) shall only be set for those foods in which the contaminant may be found in amounts that are significant for the total exposure of the consumer. They should be set in such a way that the consumer is adequately protected". Setting standards for foods that contribute little to dietary exposure would mandate enforcement activities that do not contribute significantly to health outcomes.

2. Exposure assessment is one of the four components of risk assessment within the risk analysis framework adopted by Codex as the basis for all standard-setting processes. The estimated contribution of specific foods or food groups to the total dietary exposure to a contaminant as it relates to a quantitative health hazard endpoint (e.g., PMTDI, PTWI) provides further information needed for the setting of priorities for the risk management of specific foods/food groups. Exposure assessments must be guided by clearly articulated policies elaborated by Codex with the aim of increasing the transparency of risk management decisions.

3. The purpose of this Annex is to outline steps in contaminant data selection and analysis undertaken by JECFA when requested by CCFAC to conduct a dietary exposure assessment.

4. The following components highlight aspects of JECFA's exposure assessment of contaminants and toxins that contribute to ensuring transparency and consistency of science-based risk assessments. Exposure assessments of contaminants and toxins in foods are performed by JECFA at the request of CCFAC. CCFAC will take this information into account when considering risk management options and making recommendations regarding contaminants and toxins in foods.

1. ESTIMATION OF TOTAL DIETARY EXPOSURE TO A CONTAMINANT OR TOXIN FROM FOODS/FOOD GROUPS

5. JECFA uses available data from member countries and from GEMS/Food Operating Program for analytical laboratories system on contaminant levels in foods and the amount of foods consumed to estimate total dietary exposure to a contaminant or toxin. This is expressed as a percentage of the tolerable intake (e.g., PTDI, PTWI, or other appropriate toxicological reference point). For a carcinogen with no clear threshold, JECFA uses available data on intake combined with data on carcinogenic potency to estimate potential population risks.

6. Median/mean contaminant levels in foods are determined from available analytical data submitted by countries and from other sources. These data are combined with information available for the GEMS/Food Regional diets to generate dietary exposure estimates for regions in the world. JECFA provides an estimate as to which of the GEMS/Food Regional diets are likely to approach or exceed the tolerable intake.

7. In some cases, available national contaminant and/or individual food consumption data may be used by JECFA to provide more accurate estimates of total dietary exposure, particularly for vulnerable groups such as children.

8. JECFA performs exposure assessments if requested by CCFAC using the GEMS/Food Regional Diets and, if needed, available national consumption data to estimate the impact on dietary exposure of proposed alternative maximum levels to inform CCFAC about these risk management options.

2. IDENTIFICATION OF FOODS/FOOD GROUPS THAT CONTRIBUTE SIGNIFICANTLY TO TOTAL DIETARY EXPOSURE OF THE CONTAMINANT OR TOXIN

9. From dietary exposure estimates JECFA identifies foods/food groups that contribute significantly to the exposure according to CCFAC's criteria for selecting food groups that contribute to exposure.

10. The CCFAC determines criteria for selecting foods/food groups that contribute significantly to total dietary exposure of a contaminant or toxin. These criteria are based upon the percentage of the tolerable intake (or similar health hazard endpoint) that is contributed by a given food/food group and the number of geographic regions (as defined by the GEMS/Food Regional diets) for which dietary exposures exceed that percentage.

11. The criteria are as follows:

(a) Foods or food groups for which exposure to the contaminant or toxin contributes approximately 10%[1] or more of the tolerable intake (or similar health hazard endpoint) in one of the GEMS/Food Regional diets;

or,

(b) Foods or food groups for which exposure to the contaminant or toxin contributes approximately 5%[1] or more of the tolerable intake (or similar health hazard endpoint) in two or more of the GEMS/Food Regional diets;

or,

(c) Foods or food groups that may have a significant impact on exposure for specific groups of consumers, although exposure may not exceed 5% of the tolerable intake (or similar health hazard endpoint) in any of the GEMS/Food Regional diets. These would be considered on a case-by-case basis.

3. GENERATION OF DISTRIBUTION CURVES FOR CONCENTRATIONS OF THE CONTAMINANT IN SPECIFIC FOODS/FOOD GROUPS (concurrent with 2, or subsequent step)

12. If requested by CCFAC, JECFA uses available analytical data on contaminant or toxin levels in foods/food groups identified as significant contributors to dietary exposure to generate distribution curves of contaminant concentrations in individual foods. CCFAC will take this information into account when considering risk management options and, if appropriate, for proposing the lowest achievable levels for contaminants/toxins in food on a global basis.

13. Ideally, individual data from composite samples or aggregated analytical data would be used by JECFA to construct the distribution curves. When such data are not available, aggregated data would be used (for example mean and geometric standard deviation). However, methods to construct distribution curves using aggregated data would need to be validated by JECFA

14. In presenting the distribution curves to CCFAC, JECFA should, to the extent possible, provide a comprehensive overview of the ranges of contamination of foods (i.e., both the maximum and outlier values) and of the proportion of foods/food groups that contain contaminants/toxins at those levels.

4. ASSESSMENT OF THE IMPACT OF AGRICULTURAL AND PRODUCTION PRACTICES ON CONTAMINANT LEVELS IN FOODS/FOOD GROUPS (concurrent with 2, or subsequent step)

15. If requested by CCFAC, JECFA will assess the potential impact of different agricultural and production practices on contaminant levels in foods to the extent that scientific data are available to support such assessments. CCFAC will take this information into account when considering risk management options and for proposing Codes of Practice.

16. Taking this information into account, CCFAC proposes risk management decisions. To refine them, CCFAC may request JECFA to undertake a second assessment to consider specific exposure scenarios based on proposed risk management options. The methodology for assessing potential contaminant exposure in relation to proposed risk management options needs to be further developed by JECFA.

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[1] Rounded to the nearest 1/10th of a percent.

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN PEANUTS

(AT STEP 8 OF THE PROCEDURE)

1. SCOPE

1. This document is intended to provide guidance for all interested parties producing and handling peanuts for entry into international trade for human consumption. All peanuts should be prepared and handled in accordance with the Recommended International Code of Practice – General Principles of Food Hygiene, which are relevant for all foods being prepared for human consumption. These codes of practice indicate the measures that should be implemented by all persons that have the responsibility for assuring that food is safe and suitable for consumption.

2. DEFINITIONS

2. "Blows" (Pops) means in-shell nuts which are unusually light in weight due to extensive damage from physiological, mould, insect, or other causes and which can be removed, for example, by an air-separation process.

3. "Curing" means drying of the in-shell peanuts to a safe moisture level.

4. "Farmers stock" peanuts means in-shell peanuts as they come from farms, after separation from the vines by hand and/or mechanical means.

5. " Safe water activity" means a water activity of in-shell peanuts and shelled peanuts that will prevent growth of micro-organisms normally present in the harvesting, processing, and storage environment.

6. Water activity (a), is a measure of free moisture in a product and is the water vapour pressure of the substance divided by the vapour pressure of pure water at the same temperature. Water activities above 0.70 at 25 degrees celcius (77 degree Farenheit) are 'unsafe' as far as growth of *Aspergillus flavus* and *Aspergillus parasiticus* and possible aflatoxin production are concerned.

3. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP)

3.1 PRE-HARVEST

7. To be effective, pre-harvest control of aflatoxin contamination of peanuts must take into consideration all the varied environmental and agronomic factors that influence pod and seed infection by the aflatoxin-producing fungi, and aflatoxin production. These factors can vary considerably from one location and to another, and between seasons in the same location. Some environments may be particularly favourable to fungal infection and subsequent aflatoxin contamination of groundnuts, and in these circumstances it would be necessary to consider whether or not the crop should be grown in such areas. However, for most situations it should be possible to devise agricultural practices that should reduce aflatoxin contamination in peanuts.

8. The continued cultivation of peanuts on the same land may lead to a build-up of high populations of A. flavus/parasiticus in the soil, which will increase the probability of infection and aflatoxin contamination. Some studies have been carried out on the effect of crop rotation on aflatoxin contamination. In semi-arid environments, populations of Aspergillus may be very high, and crop rotations may have little influence on the fungal activity. Cropping systems in some regions involve varied cultivation and fertiliser practices that individually or taken together may affect survival or build-up populations of the toxigenic fungi. There is evidence that peanuts grown in different soil types may have significantly different levels of infection by the moulds. Light sandy soils, for example, favour rapid proliferation of the fungi, particularly under dry conditions. Heavier soils have a higher water-holding capacity and, therefore, there is less likelihood of drought stress occurring, which may be partly responsible for the lower than average levels of aflatoxin contamination in peanuts grown on such soils.

9. In areas that are vulnerable to erosion, no-till practices may be required in the interests of soil conservation.

10. Utilize the results of soil tests to determine if there is a need to apply fertilizer and/or soil conditioners to assure adequate soil pH and plant nutrition to avoid plant stress, especially during seed development, which makes peanuts more susceptible to fungal infestation.

11. The choice of peanut variety can be important and therefore before planting, farmers should consult with the appropriate plant breeding authorities or agricultural extension services to ascertain the peanut cultivars that have been adapted to their region, and the availability of varieties that are resistant to various factors such as insect attack and microbial and fungal attack that can have an impact on the safety and quality of the peanuts produced. A cultivar should be selected that is suitable for a particular growing season and mature at the end of the rainy season so that postharvest field drying can be done under favourable conditions. It is undesirable that a variety should suffer from drought stress during pod maturation and some compromise may have to be effected between harvesting under dry conditions and avoidance of drought stress by using short-duration cultivars that mature before the rains have ended.

12. Irrigation, if feasible, is recommended to combat heat and drought stress.

13. Irrigation to ensure adequate soil moisture during the last 4-6 weeks of crop growth should minimize pre-harvest aflatoxin contamination of peanuts. This may be achieved by growing a completely irrigated crop or by applying supplementary irrigation to a basically rainfed crop. If irrigation is used, ensure that it is applied evenly and that all plants in the plot have an adequate supply of water.

14. Water used for irrigation and other purposes (e.g. preparation of pesticide sprays) should be of suitable quality for the intended use.

15. Avoid overcrowding of plants by maintaining the recommended row and intra-plant spacing for the species/varieties grown. Optimum plant populations should be established bearing in mind that too high a population may lead to drought stress where rainfall maybe below the optimum required in a growing season.

16. Excessive weed growth may deplete available soil moisture. Effective weed control by use of registered herbicides, or cultivation is therefore advisable. Care should be taken during cultivation to avoid damage to pegs and pods.

17. Cultivation and crop protection practices that lower the incidence of soil insects, mites, and nematodes should help in reducing aflatoxin contamination. Minimize insect damage and fungal infection in the vicinity of the crop by proper use of registered insecticides, fungicides, and other appropriate practices within an integrated pest management program. Growers should consult with local or national authorities to determine insects and other pests that are commonly found in their region that might attack peanuts causing them to be more susceptible to fungal infections that can lead to aflatoxin production.

18. No fungicide, or combinations of fungicides, or other chemical treatments appear to have been adopted for the practical control of *Aspergillus flavus/A. parasiticus* infection and subsequent aflatoxin contamination of peanuts pre-harvest. The results of studies on the application of fungicides on freshly harvested or windrowed peanuts are equivocal.

3.2 HARVEST

19. Trade associations as well as local and national authorities should take the lead in informing growers of the hazards associated with aflatoxin contamination of peanuts and how they may practice safe harvesting procedures to reduce the risk of contamination by fungi, microbes, and pests. Personnel who will be involved in harvesting peanuts should be well-trained in the personal hygienic and sanitary practices that must be implemented throughout the harvesting season.

20. Make sure that all equipment, which is to be used for harvesting and storage of crops, is functional. A breakdown during this critical period may cause peanut quality losses and enhance aflatoxin formation. Keep important spare parts available on the farm to minimize time loss from repairs.

21. Plan to harvest the peanuts at full maturity, unless allowing the crop to continue to full maturity would subject it to extreme heat, rainfall, and drought conditions. It is very important to harvest the crop at optimum maturity, as excessive numbers of over-mature or very immature pods at harvest can be reflected in high levels of aflatoxin in the product also delayed harvest of peanuts already infected may cause significant increase in aflatoxin content of the crop. A system by which the growing conditions of the farming crop is monitored (soil temperature and precipitation) may be very useful.

22. Individual plants that die from attack by pests, pathogens, such as *Sclerotium rolfsii* or *Fusarium spp*., and diseases, e.g. rosette virus, or insects, such as termites, earwigs, and false wireworms that cause damage to the pods, should be harvested separately as their produce is likely to contain aflatoxin.

23. If peanuts have been irrigated, care should be taken to separately harvest peanuts that are beyond the reach of irrigation systems to avoid mixing aflatoxin-free peanuts with those that are potentially contaminated.

24. Damage to pods at the time of harvest should be avoided as much as possible since this can lead to rapid invasion of the pods by *A. flavus/A. parasiticus*. Peanuts should be handled as gently as possible and every effort made to minimize physical damage at all stages of harvesting and transportation procedures.

25. After harvest, pods should be exposed for maximum rate of drying. This may be accomplished by turning the vines to leave the pods uppermost where they are away from the ground and exposed to sun and wind. Curing should be completed as soon as possible to a safe water activity so as to prevent the growth of microorganisms, particularly moulds that produce aflatoxins. However, drying too rapidly may cause skin slippage and off-flavours in the peanut kernels. When curing by supplemental heat, excessive heat should be avoided since this impairs the general quality of the peanuts, e.g. splitting of kernels after shelling. Close checks of moisture content/water activity of lots of farmer's stock peanuts should be maintained.

26. Peanuts should be dried in such a manner that damage to the peanuts is minimized and moisture levels are lower than those required to support mould growth during storage (generally less than 10%). This is necessary to prevent further growth of a number of fungal species in peanuts.

27. Freshly harvested peanuts should be cleaned and sorted to remove damaged nuts and other foreign matter. Cleaning procedures such as density separators or air legs to remove light pods and slotted screens to remove pre-shelled kernels, may remove some infected nuts.

3.3 TRANSPORT

28. The nuts should be moved to a suitable storage, or to the processing area for immediate processing as soon as possible after harvesting or drying.

29. Containers (e.g. wagons, trucks) to be used for collecting and transporting the harvested peanuts from the farm to drying facilities, or to storage facilities after drying, should be clean, dry, and free of insects and visible fungal growth before use and re-use.

30. Transport containers should be dry and free of visible fungal growth, insects, and any contaminated material. As necessary, transport containers should be cleaned and disinfected before use and re-use and be suitable for the intended cargo. The use of registered fumigants or insecticides may be useful. At unloading, the transport container should be emptied of all cargo and cleaned as appropriate.

31. Consignments of peanuts should be protected from all additional moisture by using covered or airtight containers or tarpaulins. Avoid temperature fluctuations that may cause condensation to form on the peanuts, which could lead to the local moisture build up and consequent fungal growth and aflatoxin formation.

32. Farmers stock peanuts should be screened for aflatoxin contamination to more accurately segregate for proper storage. Aflatoxin-free loads should be segregated from loads with low levels of aflatoxin contamination, destined for subsequent processing and clean-up, and from loads that are highly contaminated.

33. Avoid insect, bird, and rodent infestation during transportation by the use of insect and rodent proof containers or insect and rodent repellent chemical treatments provided they are approved for the intended use of the peanuts.

3.4 SEGREGATION OF AFLATOXIN CONTAMINATED LOTS

34. The distribution of aflatoxin in peanuts has been thoroughly investigated. The results from the investigations indicate that sorting for quality removes a large part of the aflatoxin present at harvest. The distribution of aflatoxins are very heterogeneous in a lot of peanuts and consequently the sampling plan used is critical.

3.5 STORAGE

35. Post-harvest storage of peanuts is the phase that can contribute most to the aflatoxin problem in peanuts. The primary goal for aflatoxin prevention in storage is to prevent mould development of the peanuts due to condensation or leaks in the warehouse.

36. A properly ventilated warehouse with a good roof, preferably double sidewalls, and a concrete floor are required to prevent rewetting of peanuts. Make sure that the storage facilities include dry, well-vented structures that provide protection from rain, drainage of ground water, protection from the entry of insects, rodents, and birds, and minimum temperature fluctuations. Painting warehouse roofs with white paint reduces solar heat load when compared to conventional galvanized material. The double roofing concept of installing a new roof over a defective, existing roof with an air space in-between the two roofs, has proven effective in controlling warehouse condensation.

37. Water activity, which varies with moisture content and temperature, should be carefully controlled during storage.

38. Uniform loading of the warehouse allows excessive heat and moisture to escape and reduces favourable areas for insect infestation. Stock piling of peanuts can cause heat build-up and moisture accumulation with resultant mold growth and aflatoxin contamination.

39. Prevention of aflatoxin increase during storage and transportation depends on keeping a low moisture content, the temperature in the environment, and the hygienic conditions. *Aspergillus flavus/A. parasiticus* cannot grow or produce aflatoxins at water activities less than 0.7; relative humidity should be kept below 70% and temperatures between 0 and 10^0C are optimal for minimizing deterioration and fungal growth during long time storage.

40. The aflatoxin level in peanuts coming into a storage and peanuts going out of a storage should be monitored, using appropriate, sampling and testing programs.

41. For bagged peanuts, ensure that bags are clean, dry, and stacked on pallets or incorporate a water impermeable layer between bags and the floor.

42. Store at the lowest temperature possible consistent with ambient conditions but avoid temperatures near freezing point. Where possible aerate the peanuts by circulation of air through the storage area to maintain proper and uniform temperature levels throughout the storage area.

43. Measure the temperature of the stored peanuts at several fixed intervals during storage. A temperature rise may indicate microbial growth and/or insect infestation. Visually check peanuts for evidence of mold growth. Separate the apparently infected portions of the peanuts and send samples for analysis if possible. When separated, lower the temperature in the remaining peanuts and aerate. Avoid using infected peanuts for food or feed production.

44. Use good ‘housekeeping’ procedures to minimize levels of insects and fungi in storage facilities. This may include the use of suitable traps, registered insecticides or fungicides and fumigants. Care should be taken to select only those chemicals that will not affect or cause harm to the peanuts.

45. Document the harvesting and storage procedures implemented each season by making notes of measurements (e.g. temperature, moisture, and humidity) and any deviation or changes from traditional practices. This information may be very useful for explaining the causes of fungal growth and aflatoxin formation during a particular crop year and help to avoid similar mistakes in the future.

4. GOOD MANUFACTURING PRACTICE (GMP)

4.1 RECEIVING AND SHELLING

46. A buyer for a shelling plant, whether located at the plant or at an outlying buying point, should monitor the quality of peanuts offered to him and assist suppliers in eliminating improper practices. Buyers should encourage suppliers of farmer's stock peanuts to follow good production practices as described herein.

47. Farmer's stock peanuts received at the shelling plant should be inspected on arrival. It is advisable to know the origin and history of each lot of peanuts. The transport vehicle should be examined. If the vehicle is not fully enclosed, it should have a covering such as tarpaulin to keep out rain or other forms of water. The general appearance of the peanuts should be observed during the process of unloading. If the peanuts are wet to the touch, they should NOT be mixed with peanuts in a bulk warehouse. The vehicle which contains the peanuts should be set aside until a decision is made for their disposal. If possible, remove a sample from each lot, separate the "loose shelled" kernels and shell the remainder for peanut grade observation before an acceptance decision is made.

48. Specifications for the purchase of peanuts intended for further processing should include a maximum level for aflatoxin based in appropriate methods of analysis and a proper sampling plan.

49. Special precautions must be taken to reject peanuts showing signs of insect damage or mould growth because of the danger of their containing aflatoxins. Aflatoxin test results should be known before allowing lots of raw peanuts to be processed. Any lot of raw peanuts with unacceptable levels of aflatoxins, which cannot be reduced to permitted levels by the available sorting equipment, should not be accepted.

50. The peanut processor must satisfy himself that the supplier of shelled peanuts is able to control properly his own operations to assure that the finished product is within the maximum limit for aflatoxin.

51. Examine all loose shelled, damaged "Blows" and under sized kernels for possible presence of mould. If no external mould is visible, split the kernels to disclose possible hidden mould growth. Excessive mould or presence of mould resembling *A. flavus* warrants a chemical test for aflatoxin or rejection of the lot.

4.2 SORTING

52. Sorting is the final step for removing defective kernels. Sorting belts should be well lighted, with peanuts passing through no more than one layer deep, and operated at a speed which enable hand sorters to assure effective removal of foreign material and defective kernels. Sorting machines should be adjusted as often as practicable against standards to assure removal of all defective kernels. Adjustment should be checked frequently and regularly.

53. To remove mould-contaminated nuts effectively, sorting should be performed before and after blanching and roasting. Where splitting is part of the processing operation, nuts that resist splitting should be removed. The effectiveness of sorting techniques should be checked by regular aflatoxin analyses of the sorted peanuts stream or of the finished product, or both. This should be done frequently enough to ensure that the product is completely acceptable.

54. Defective (mouldy, discoloured, rancid, decayed, shriveled, insect or otherwise damaged) kernels should be bagged separately and tagged as unsuitable for human consumption. Containers of defective peanuts should be removed as soon as practicable form the processing area. Materials which carry the danger of contamination by aflatoxin, or which are contaminated should be diverted to non-food uses.

55. Rejected peanuts from the sorting procedure should be destroyed or segregated from edible products. If they are to be used for crushing, they should be separately bagged and tagged as unsuitable for direct human consumption in their present state.

4.3 BLANCHING

56. Blanching used in conjunction with gravity tables and manual or electronic sorting is very efficient in removing aflatoxin contaminated kernels. Colour sorting, combined with blanching have been shown to reduce aflatoxin contamination by as much as 90%.

4.4 PACKAGING AND STORAGE OF END PRODUCT

57. Peanuts should be packed in clear jute bags, cartons or polypropylene bags. If using jute, ensure bags are not treated with mineral hydrocarbon based oils. All bags/cartons should be lot identified to facilitate traceability of the product before being moved to controlled storage facilities or transported.

58. Peanuts that have been processed should be stored and transported under such conditions as will maintain the integrity of the container and the product within it. Carriers should be clean, dry weatherproof, free from infestation and sealed to prevent water, rodents or insects from reaching the peanuts. Peanuts should be loaded, held and unloaded in a manner that protects from damage or water. Well-insulated carriers or refrigerated vehicles are recommended for transport when climatic conditions indicate such a need. Extreme care should be taken to prevent condensation when unloading peanuts from cold storage or from a refrigerated vehicle. In warm, humid weather, the groundnuts should be allowed to reach ambient temperature before exposure to external conditions. This tempering may require 1-2 days. Peanuts that have been spilled are vulnerable to contamination and should not be used for edible products.

5. A COMPLEMENTARY MANAGEMENT SYSTEM TO CONSIDER IN THE FUTURE

59. The Hazard Analysis Critical Control Point (HACCP) system is an all-encompassing integrated food safety management system that is used to identify and control hazards within the production and processing system. The general principles of HACCP have been described in several documents.

60. When properly implemented, this system should result in a reduction of the levels of aflatoxins in peanuts. The use of HACCP as a food safety management system has many benefits over the types of management control systems in some segments of the food industry. At farm level there are many factors that influence the aflatoxin contamination of peanuts most of which are environmentally related, such as weather and insects, and these are difficult, if not impossible, to control. Particular attention should be paid to the soil population of the fungus, the health of seed material, soil moisture deficit stress at the pod formation and pod maturity stages, and rains at harvest. The critical control points often do not exist a the pre-harvest level. However, after harvesting, the critical control points may be identified for aflatoxins produced by fungi during drying and storage. For example a critical control point could be at the end of the drying process and one critical limit would be the water content/ water activity.

61. It is recommended that resources be directed to emphasizing the Good Agricultural Practices (GAPs) at the pre-harvest level and during drying and storage and Good Manufacturing Practices (GMPs) during the processing and distribution of various products. A HACCP system should be built on sound GAPs and GMPs.

62. Intergrated mycotoxin control programs should incorporate HACCP principles in the control of risks associated with mycotoxin contamination of foods and feeds. The implementation of HACCP principles will minimize aflatoxin contamination of peanuts through applications of preventive controls to the extent feasible in the production, handling storage and processing of each peanut crop.

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF LEAD CONTAMINATION IN FOODS

(AT STEP 8 OF THE PROCEDURE)

INTRODUCTION

1. Lead is a toxic heavy metal with widespread industrial uses, but no known nutritional benefits. The toxic effects of lead in food have been reviewed several times by the FAO/WHO Joint Expert Committee on Food Additives (JECFA). Chronic exposure to lead at relatively low levels can result in damage to the kidneys and liver, and to the reproductive, cardiovascular, immune, hematopoietic, nervous, and gastrointestinal systems. Short-term exposure to high amounts of lead can cause gastrointestinal distress, anemia, encephalopathy, and death. The most critical effect of low-level lead exposure is reduced cognitive and intellectual development in children.

2. Lead exposure can occur through food and water, as well as in the workplace, through hobbies, and through exposure to lead-contaminated soil and air.

3. Lead contamination of food arises from numerous sources, including air and soil. Atmospheric lead from industrial pollution or leaded gasoline can contaminate food through deposition on agricultural crop plants. Soil lead arising from lead-containing ordnance stored on former munitions sites and from ammunition used in rifle or military firing, atmospheric deposition, or inappropriate application of pesticides, fertilizers, or sewage sludge can contaminate agricultural crop plants through uptake or through deposition of the soil on plant surfaces. Contaminated plants and soil are, in turn, a source of contamination of livestock.

4. Water is also a source of lead contamination of food. Surface water sources can be contaminated through runoff (drainage), atmospheric deposition, and, on a local level, by leaching of lead from game shot or fishing sinkers. Contaminated surface waters are a potential source of contamination of aquatic food animals. For drinking water and water for food preparation, the use of lead pipes or lead-containing fixtures in water distribution systems is a primary source of contamination.

5. Lead contamination of food can also arise from food processing, food handling, and food packaging. Sources of lead in food processing areas include lead paint and lead-containing equipment, such as piping and lead-soldered machinery. In the packaging area, lead-soldered cans have been identified as a very important source of lead contamination of food. Other packaging items that are potential sources of lead contamination include colored plastic bags and wrapping papers, cardboard containers that contain lead or are colored with lead-containing dyes, lead foil capsules on wine bottles, and lead-glazed ceramic, lead crystal, or lead-containing metal vessels used for packaging or storing foods.

6. There have been worldwide efforts to reduce lead exposure from food. Such efforts have focused on implementing standards for allowable lead levels in food and food additives; ending the use of lead-soldered cans, particularly for infant foods; controlling lead levels in water; reducing leaching from lead-containing vessels or restricting their use for decorative purposes; and identifying and reacting to additional sources of lead contamination in foods or dietary supplements. Although not targeted specifically at food, efforts to reduce environmental sources of lead, including restrictions on industrial emissions and restricted use of leaded gasoline, have also contributed to declining lead levels in food.

7. Codex, intergovernmental organization, and many countries have set standards for allowable levels of lead in various foods. Low levels of lead in foods may be unavoidable, because of the ubiquitous nature of lead in the modern industrial world. However, following good agricultural and manufacturing practices can minimize lead contamination of foods. Because many useful interventions for reducing lead rely on actions by consumers, a section with suggestions for modifying consumer practices has also been included in this Code.

1. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICES (GMP)

1.1 AGRICULTURAL

8. Leaded gasoline is a major contributor to atmospheric lead. National authorities should consider reducing or eliminating the use of leaded gasoline in agricultural areas.

9. Agricultural lands near industrial facilities, roadways, and ordnance depots, rifle ranges and military firing ranges may have higher lead levels than more isolated lands. Land near buildings with weathered exterior paint also may have high lead levels, a particular concern when such buildings are situated near livestock or small gardens. Where possible, farmers should test lead levels in soils that are near lead sources or that are suspected of having elevated lead levels to determine if lead levels exceed recommendations for planting by local authorities.

10. Farmers should avoid using lands that have been treated with lead arsenate pesticide, such as former orchards, to grow crops that may accumulate lead internally (such as carrots and other root crops) or on their surface (such as leafy vegetables).

11. Farmers should avoid growing crops on lands that have been treated with sewage sludge that does not adhere to maximum allowable lead levels set by national authorities.

12. Leafy vegetables are more vulnerable than non-leafy vegetables or root vegetables to deposition from airborne lead. Cereal grains also have been reported to absorb lead from the air at a significant rate. In areas where atmospheric lead levels are higher, farmers should consider choosing crops that are less vulnerable to airborne deposition.

13. Farmers should avoid using compounds that contain lead (such as lead arsenate pesticide) or may be contaminated with lead (e.g., improperly prepared copper fungicide or phosphate fertilizer) in agricultural areas.

14. Dryers powered with leaded gasoline have been found to contaminate drying crops with lead. Farmers and processors should avoid using dryers or other equipment powered by leaded gasoline on harvested crops.

15. Crops should be protected from lead contamination (e.g., exposure to atmospheric lead, soil, dust) during transport to processing facilities.

16. Home or small-scale commercial gardeners should also take steps to reduce lead contamination. Avoid planting near roadways and buildings painted with lead-based paint. If gardens are located in an area with potentially high lead levels, test soil before planting. Good gardening practices for soils with mildly elevated lead levels include mixing organic matter into the soil, adjusting soil pH to reduce availability of lead to plants, choosing plants that are less vulnerable to lead contamination, and using liners to reduce contact deposition of soil on plants. Some lead levels are considered too high for gardening. It may be possible to build up gardening beds with lead-free soil in such areas. Gardeners should consult with local agricultural services, where available, for advice on what lead levels are too high for gardening and advice on how to garden safely in lead-contaminated soils.

17. Agricultural water for irrigation should be protected from sources of lead contamination and monitored for lead levels to prevent or reduce lead contamination of crops. For example, well water used for irrigation should be properly protected to prevent contamination and routinely monitored.

18. Local and national authorities should make farmers aware of appropriate practices for preventing lead contamination of farmlands.

1.2 DRINKING WATER

19. National authorities should consider establishing allowable lead levels or appropriate treatment techniques for controlling lead levels in drinking water. The WHO has established a guideline value for maximal lead levels in drinking water of 0.010 mg/L.

20. Administrators of water systems with high lead levels should consider treatment techniques, such as increasing the pH of acidic waters, to minimize corrosion and reduce leaching of lead in the distribution system.

21. Where appropriate, administrators of water systems should consider replacing problematic lead piping and other lead-containing fixtures.

1.3 FOOD INGREDIENTS AND PROCESSING

22. National authorities should consider establishing standards limiting the amount of lead allowed in foods and food ingredients, including the traditional foods of their countries. Selected foods and dietary supplements should be monitored to ensure that lead levels do not rise above normal background levels.

23. Food processors should choose food and food ingredients, including ingredients used for dietary supplements that have the lowest lead levels possible. They should also consider whether the land used to produce crops has been treated with lead-containing pesticides or sewage sludge.

24. During processing, maximum removal of surface lead from plants should be practiced, e.g., by thoroughly washing vegetables, particularly leafy vegetables; removing the outer leaves of leafy vegetables; and peeling root vegetables, where appropriate (Home gardeners should also follow such steps if their soil has elevated lead levels).

25. Food processors should ensure that the water supply for food processing complies with maximum limits for lead established by the national or local authorities.

26. Food processors should examine piping within facilities to ensure that older piping is not adding lead to water supplies inside the facility. Such piping may include brass fixtures, in addition to lead-soldered pipes.

27. Food processors should use food-grade metals for all metal surfaces that come into contact with food and beverages.

28. Food processors should not use lead solder to repair broken equipment in food processing facilities. They should also not substitute non-food-grade equipment that may be present in a food processing facility for broken food-grade equipment.

29. Food processors should ensure that lead paint peelings do not become a source of lead contamination in processing facilities. If food processors carry out lead paint abatement, they should also ensure that appropriate cleanup procedures are followed to prevent further dispersion of lead paint and dust, which could create a greater hazard.

30. Food processors should occasionally test incoming raw materials and finished products for lead to verify that their control measures are functioning effectively.

1.4 PRODUCTION AND USE OF PACKAGING AND STORAGE PRODUCTS

31. To provide maximum protection against lead contamination, food processors should not use lead-soldered cans. Alternatives to lead-soldered cans are discussed in Food and Nutrition Paper 36 from the FAO, “Guidelines for can manufacturers and food canners. Prevention of metal contamination of canned foods,” as well as JECFA Monograph 622. These alternatives include using two-piece cans (which lack side seams) rather than three-piece cans, using cementing and welding to bond seams instead of soldering, using lead-free (tin) solders, and using alternative containers, such as glass.

32. Where it is not feasible to avoid the use of lead-soldered cans, methods for reducing lead exposure from lead-soldered cans are discussed in depth in FAO Food and Nutrition Paper 36. Lead can be released from the solder surface itself, or from solder dust or solder splashes deposited inside the can during the can-making process. Methods for reducing splashing and dust formation include avoiding the use of excess flux, controlling exhaust over the work area to minimize dust deposition, controlling the temperature of the fluxed can body and solder, post-solder lacquering of the interior surface or interior side seams of cans, careful wiping of excess solder from finished cans, and washing soldered cans before use. For a detailed description of proper manufacturing practices with lead-soldered cans, the FAO paper should be consulted.

33. Tinplate used for food cans should meet international standards for maximum allowable lead concentration. ASTM International has set a maximum concentration of 0.010 percent lead for "Grade A" tinplate.

34. Lead dyes or lead-based printing inks should not be used for packaging, such as for brightly colored candy wrappers. Even if such wrapping does not come in direct contact with foods, children may be tempted to put the brightly colored wrappers in their mouths.

35. Plastic bags or boxes with exteriors treated with lead-based dyes or lead-based printing inks should not be used for packing food. Handling of these items during cooking or reuse by consumers for storing other food items can cause lead contamination.

36. Packing foods for sale in traditional lead-glazed ceramics should be avoided because these ceramics may leach significant quantities of lead into the foods.

37. Lead foil capsules should not be used on wine bottles because this practice may leave lead residues around the mouth of the bottle that can contaminate wine upon pouring.

38. National authorities should consider setting standards for lead migration from lead-glazed ceramicware, lead crystal, and other lead-containing items that might potentially be used for food storage or preparation by consumers.

39. Decorative ceramicware that has the potential to leach unacceptable quantities of lead should be clearly labeled as not for food use.

40. Ceramicware producers should use manufacturing procedures and quality control mechanisms that minimize lead leaching.

1.5 CONSUMER PRACTICES

41. Local and national authorities should consider educating consumers about appropriate practices to reduce lead contamination in the garden and the home.

42. Consumers should avoid storing foods, particularly acidic foods or foods for infants and children, in decorative ceramicware, lead crystal, or other containers that can leach lead. Foods should not be stored in opened lead-soldered cans or stored in reused lead-dyed bags and containers. Consumers should avoid frequent use of ceramic mugs when drinking hot beverages such as coffee or tea, unless the mugs are known to have been made with a lead glaze that is properly fired or with a non-lead glaze.

43. Consumers should wash vegetables and fruit thoroughly to remove dust and soil that may contain lead. Washing hands before preparing food will also help remove any lead-contaminated dust or soil from hands.

44. Where lead in water distribution systems is a problem, consumers should let water run from faucets before use to allow corroded lead from piping to be flushed out of the system, particularly if they are preparing foods for infants or children. Hot water from the faucet should not be used for cooking or food preparation.

1.6 CONSIDERATION FOR CERTAIN FOODS

45. Calabash chalk, also known by other names such as Argila, La Croia, Calabarstone, Ebumba, Mabele, Nzu, and Ulo, is eaten by some women as a traditional food to help alleviate morning sickness during pregnancy. Levels of lead in this product are often high (greater than 10 mg/kg) and may have consequences for the health of the developing fetus. If the product cannot be produced without high levels of lead, the product should no longer be consumed.

DRAFT MAXIMUM LEVEL FOR OCHRATOXIN A
IN
RAW WHEAT, BARLEY, AND RYE

(AT STEP 7 OF THE PROCEDURE)

Code No.	Food	ML (µg/kg)	Step	Remarks
GC 0654 GC 0640 GC 0650	Raw Wheat, Barley, and Rye	5 µg/kg	7	

DRAFT MAXIMUM LEVEL FOR LEAD IN FISH

(AT STEP 7 OF THE PROCEDURE)

Code No.	Food	ML (mg/kg)	Step	Remarks
VD120 WF115 WS125	Fish	0.2 mg/kg	7	

APPENDIX XIX

PROVISIONAL LIST OF MAIN INTERNATIONALLY TRADED FISH SPECIES

Entry Number	Common Name	Latin Name	Maximum Level proposed
1	Anchovy	*Engraulidae*	
2	Barracouta	*Thyrsites spp.*	
3	Bass	*Dicentrachus labrax*	
4	Blue-mouth/black-belly rosefish/jacopever	*Sebastichthys capensis*	
5	Coalfish	*Gadidae*	
6	Cod	*Gadus morhua, Gadus callarias, Serranidae, Epinephelus, Mycteroperca spp.*	
7	Cutlass/hair tails	*Triciuridae, Lepidopus spp.*	
8	Eel	*Anguillidae*	
9	Flounder	*Platichthys flesus*	
10	Haddock	*Melanogrammus aeglefinus, Gladus aeglefinus*	
11	Halibut	*Hippoglossus hippoglossus, hippoglossus stenolepis*	
12	Hake	*Merluccius spp.*	
13	Herring	*Clupea harengus spp.*	
14	Mackerels, jack and horse mackerel	*Scomber spp, Pneumatophorus spp., Tranchurus spp., decapterus spp.*	
15	Marlin, sailfish, spearfish	*Tetrapturus spp., Tetrapturus albidus, makaira marline, Istiophorus spp.*	
16	Mullet	*Muglidae*	
17	Perch	*Percidae*	
18	Pollack	*Pollachius pollachius, Gadus pollachius*	
19	Salmon	*Salmo salar, Oncorhynchus spp.,*	
20	Sardine, sardinella, brisling, sprat	*Sardina pilchardus, Sardinops spp., Sardinalla spp., Sprattus sprattus*	
21	Scabbard	*Lepidopus xantusi*	
22	Snoek	*Esocidae, Gempylidae*	
23	Sole	*Solea vulgaris vulgaris, solea lascaris, Platichthys flesus*	
24	Tuna, skipjack tuna, yellow fin tuna, bonit	*Tunnidae, Euthynnus pelamis, Katsuwonus pelamis, Thunnus albacares, Neothunnus albacares, Sarda spp.*	
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[*n*]			

PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN TREE NUTS

(AT STEP 5 OF THE PROCEDURE)

INTRODUCTION

1. The elaboration and acceptance of a Code of Practice for tree nuts by Codex will provide uniform guidance for all countries to consider in attempting to control and manage contamination by various mycotoxins, specifically aflatoxins. In order for this Code of Practice to be effective, it will be necessary for the producers and processors in each country to consider the general principles given in the Code, taking into account the agronomic practices associated with the tree nuts produced in their regions, before attempting to implement provisions enumerated in the Code. It is important for producers to realize that Good Agricultural Practices (GAP) represent the primary line of defense against contamination of nuts with aflatoxins, followed by the implementation of Good Manufacturing Practices (GMP) and Good Storage Practices (GSP) during the handling, processing, storage and distribution of nuts for human consumption. Only by effective control at all stages from the farm through to processing can excellent quality of the final product be assured. However, the complete elimination of mycotoxin contaminated commodities, including tree nuts, is not achievable at this time.

2. This Code of Practice applies to all varieties of tree nuts of commercial and international concern, including almonds (*Prunus amygdalus)*, Brazil nuts (*Bertholletia excelsa)*, cashews (*Anacardium occidentale)*, hazel nuts (*Corylus* spp.), macadamia nuts (*Macadamia* spp.), pecans (*Carya* spp.), pine nuts (*Pinus* spp.), chestnuts (Castanea spp.) , pistachio nuts (*Pistacia* spp.) and walnuts (*Juglans* spp.). It contains general principles for the reduction of aflatoxins in tree nuts that should be sanctioned by national authorities. National authorities should educate producers regarding the practical measures and environmental factors that promote infection and growth of fungi in tree nuts resulting in the production of aflatoxin in orchards or in the forest. Emphasis should be placed on the fact that the planting**,** pre-harvest and post-harvest strategies for a particular nut crop depends on the climatic conditions of a particular year, and traditional production, harvesting and processing practices followed in a particular country or region. National authorities should also support research on methods and techniques to prevent fungal contamination in the orchard or in the forest and during the harvesting, processing and storage of tree nuts. An important part of this is the understanding of the ecology of *Aspergillus flavus/parasiticus* in connection with tree nuts.

3. Fungi in the *Aspergillus* species are rapidly growing hyaline molds that are common opportunists found in the soil and on decaying matter. Their colonies are usually yellow, yellow-green, yellow-brown, or green; granular, velvety, or cottony; and have a white peripheral apron and a distinct margin.

4. The aflatoxin-producing *Aspergillus* species, and consequently dietary aflatoxin contamination, are ubiquitous in areas of the world with hot humid climates. *Aspergillus flavus/A. parasiticus* cannot grow or produce aflatoxins at water activities less than 0.7; relative humidity below 70% and temperatures below 10ºC..Under stress conditions such as drought or insect infestation, aflatoxin contamination is likely to be high. Improper storage conditions can also lead to aflatoxin contamination after crops have been harvested. Usually, hot humid conditions lead to mould growth on the stored food and to high levels of aflatoxins.

5. Some procedures used to reduce and prevent aflatoxin production include: (1) selection of resistant varieties, if practicable, (2) minimize the presence of insects and other pests in the orchard during the growing phase, (3) minimize physical damage to nuts during harvesting and transportation, and (4) ensure that nuts are properly cleaned, dried and labeled when placed in a storage facility equipped with temperature and moisture controls.

1. SCOPE

6. This document is intended to provide guidance for all persons involved in producing tree nuts for entry into international trade for human consumption. All tree nuts should be prepared and handled in accordance with general hygienic principles and practices that are pointed out in appropriate sections of the Recommended International Code of Hygienic Practice for Tree Nuts[1], and the Recommended International Code of Practice-General Principles of Food Hygiene[2], which are relevant for all foods being prepared for human consumption. These codes of practice indicate the measures that should be implemented by all persons that have the responsibility for assuring that food is safe and suitable for consumption.

2. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) GOOD MANUFACTURING PRACTICES (GMP) AND GOOD STORAGE PRACTICES (GSP)

2.1 CRITERIA FOR ORCHARD SITES OR PICKING SITES

7. Growers should obtain background information concerning the potential orchard site to determine if: (1) the soil composition is ideal to support the growth of the desired tree variety(2) there is adequate drainage of ground water (3) there are any environmental factors inherent to that location (such as wind-, soil- and dust-borne contaminants and pollutants) that might have a negative impact on safety concerns for human foods and (4) there is an available source of water suitable for irrigation and other purposes.

8. Neighboring fields should not be used for plants which are known to be easily infected with *A. flavus/parasiticus* (e.g. maize) and consequently serve as a source of infection (spores spread by winds, insects, etc). Furthermore plants carrying specific insects that damage tree nut kernels, which may be a vector in the infection process, should also be avoided.

9. If the tree nuts are obtained from around cultivation, the picker should ascertain that there are not any environmental factors inherent to that location (such as wind-, soil- and dust-borne contaminants and pollutants) that might have a negative impact on safety concerns for tree nuts.

2.2 PLANTING

10. In designing the layout of the orchard, information concerning plant spacing may be obtained from plant breeders or agricultural personnel. Adequate spacing is necessary so that trucks and equipment needed for spraying trees can be accommodated and that ventilation of the orchard is maintained to reduce the growth of fungi.

11. Where possible and practical, the orchard surface area should be prepared before planting by destroying or removing all debris that may have served, or may potentially serve as substrates for the growth of mycotoxin-producing fungi. If there are areas vulnerable to soil erosion, no-till practices may be required in the interests of soil conservation.

12. Before planting, growers should consult with appropriate plant breeding authorities or tree nursery personnel to ascertain the availability of species that are resistant to various factors (e.g., frost, microbial and fungal diseases) that can have an impact on the safety and quality of nuts produced in the orchard.

13 Growers should be familiar with GAPs associated with the use of formulated fertilizers, manure and other biosolids that may be used to enhance the nutritional state of the soil, without increasing the risks of introducing hazards originating from microbial or fungal sources in the orchard.

14. Growers should consult with local or national authorities to determine insects and other pests that are commonly found in their region that might attack tree nuts causing them to be more susceptible to fungal infections that can lead to aflatoxin production.

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1 Recommended International Code of Hygienic Practice for Tree Nuts, CAC/RCP 6-1972, Codex Alimentarius Volume 5A.

2 Recommended International Code of Practice- General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 4 (2003), Codex Alimentarius Volume 1A.

15. Growers should take adequate precautions to ensure that human and animal wastes are disposed of in such a manner as not to constitute a public health or hygienic hazard, and take extreme care to protect the products from contamination with these wastes.

2.3 PRE-HARVEST

16. During the growing seasons, roadways near the orchards should be watered or oiled periodically to minimize outbreaks of mites as a result of dusty conditions. Cultivation practices, in the vicinity of the orchard, that might disperse *Aspergillus flavus/A. parasiticus,* and other fungal spores in the soil to aerial parts of trees should be avoided.

17. Pesticides approved for use on tree nuts, including insecticides, fungicides, herbicides, acaricides, and nematocides should be used to minimize damage that might be caused by insects, fungal infections, and other pests in the orchard and adjacent areas. Accurate records of all pesticide applications should be maintained.

18. Irrigation should be implemented in regions with high temperatures and very little rainfall during the growing season to minimize tree stress, however, irrigation water should be prevented from contacting the nuts and foliage.

19. Water used for irrigation and other purposes (e.g., preparation of pesticide sprays) should be of suitable quality for the intended used.

20. All equipment and machinery, which is to be used for harvesting, storage and transportation of crops, should not constitute a hazard to health. Before harvest time, all equipment and machinery should be inspected to ascertain that they are clean and in good working condition to avoid contamination of the nuts with soil and other potential hazards.

21. Trade Associations, as well as local and national authorities should take the lead in informing growers of the hazards associated with aflatoxin contamination of tree nuts and how they may practice safe harvesting procedures to reduce the risk of contamination by fungi, microbes and pests.

22. Personnel that will be involved in harvesting nuts should be trained in personal hygienic and sanitary practices that must be implemented in processing facilities throughout the harvesting season.

2.4 HARVEST

23. Harvesting of nuts should begin as soon as practicable after maturation to minimize problems involving fungal attack and insect infestation. Some varieties of nuts become contaminated with aflatoxins while still on the tree as a result of insect infestation and hull splitting, therefore, the earlier the harvest, the less chance there is for contamination to occur because there is a greater chance that the outer hull will remain intact to protect the underlying shell from insects and fungal spores. The area under the trees should be cleared of any debris or decayed materials where A. flavus or A. parasiticus might reside.

24. Nuts, harvested by shaking the trees, should ideally be collected by mechanical harvesters with catching frames, or on some type of protective sheets or tarps under the trees to prevent nuts from falling to the ground. In regions where certain varieties of nuts are traditionally harvested by shaking the trees and/or allowing mature nuts to fall freely to the ground for collection by harvesting equipment or by hand, the orchard should not be used for grazing or holding cattle or other animals. If the land has been so used, the land should be worked immediately prior to harvesting (disced, rotilled, soil turned in some manner, or other feasible methods), to lesson the hazard of fecal contamination of tree nuts. In addition, procedures should be in place to ensure their removal as soon as possible to decrease exposure to *Aspergillus flavus/A. parasiticus* spores that may be denser in the air near the ground and associated with plant debris.

25. The nuts, after collection, should be sorted to remove damaged nuts, foreign materials, and transported, as soon as possible, to a processing facility for immediate processing (hull removal) in containers (e.g., trucks, conveyers) that are clean, dry and free of insects and visible fungal growth. High humidities, which are conducive to proliferation of mold and development of mycotoxins, should be avoided to the greatest extent practical. Conveyances for transporting nuts should be constructed of a material that will permit thorough cleaning and maintenance so as not to constitute a source of contamination for tree nuts. If the nuts cannot be transported immediately to a processing facility they should be temporarily stored in a way that will keep them dry and protected from rain, insects, rodents, birds and drainage of ground water.

2.5 POST-HARVEST

26. Nuts remaining on the trees after harvest should be removed during the winter months to reduce the over wintering of various insect populations.

27. Trees should be pruned and treated with appropriate pesticides prior to each growing season.

28. The orchard floor or woodland should be cleared of litter and debris from the harvesting operations in order to decrease the colonization of *Aspergillus* fungi in the orchard or woodland.

29. Containers, equipment and machinery that have been used for harvesting operations should be cleaned and stored in a clean location to minimize inadvertent contamination with fungi, chemicals, fertilizers or toxic substances.

30. Harvesting and storage procedures implemented each crop year should be documented by making notes of measurements (e.g., temperature, moisture, and humidity) and any deviation or changes from traditional practices. This information may be useful for explaining the cause(s) of fungal growth and mycotoxin formation during a particular crop year and help to avoid similar mistakes in the future.

2.6 PROCESSING

31. Personnel involved in all stages of tree nut processing should maintain a high degree of personal cleanliness, wear suitable protective clothing, be trained in food hygiene and general sanitation procedures to a level appropriate to the operations they are to perform in the processing facility. A system should be in place to ensure that all personnel remain aware of all precautions necessary to reduce the risk of aflatoxin contamination in the processing operations.

32. Areas where raw materials are received or stored should be separated from areas in which final product preparation or packaging is conducted as to preclude contamination of the finished product. The hulling of nuts should be carried out in a location that is separated by partitions from the main processing area of the facility. Care should be taken to ensure that dust-laden air is not introduced into other areas of the facility through a vent system or other openings.

33. Processors should establish good quality control procedures at every step in the processing sequence to avoid cross contamination of aflatoxins between various lots of nuts during processing.

34. Hulling of nuts should begin as soon as possible after harvest. If a short delay in hull removal is anticipated, the nuts should be stored under conditions that will protect them from insects, mites, vermin, domestic animals, fungi, chemicals or microbiological contaminants, debris and dust. If a long delay is anticipated, nuts should be stored under controlled conditions to prevent aflatoxin production. Appropriate fumigation could be used to control insects.

35. Dehulled nuts should be dried as soon as possible, preferably within 72 hours after harvesting; the drying rate and heat intensity should be determined by the intended end use of the final nut product(s). The nuts should be dried to a safe moisture level that corresponds to a water activity, Aw, of less than 0.70 at 25ºC. *Aspergillus flavus/A. parasiticus* cannot grow and produce aflatoxin at water activities less than 0.70. Dehulled nuts that are allowed to sun-dry are at a greater risk of becoming contaminated during the drying process as a result of fungal growth and/or damage by pests.

36. Moisture levels should be checked after drying by taking samples as representative of the lot as possible. Make sure that the equipment needed for moisture measurements is calibrated.

37. Mechanical driers should be available and used to reduce the potential of further aflatoxin contamination in regions where steam or aqueous solutions are traditionally used to facilitate dehulling, and segregation of defective nuts**;** the water used should be of suitable quality for intended use and never recycled.

38. Personnel and equipment used in the hulling/ drying areas of a processing facility should not enter into other areas of the facility; this will reduce the risk of contaminating other areas of the facility. Waste materials should be frequently removed from the working area during operation and adequate waste receptacles should be provided.

39. Various visual (manual) and/or electronic sorting techniques should be used to remove foreign materials and nuts with various defects. Nuts should not be used for processing unless they are free from obvious faecal contamination, infestations, decomposition and other defects. Special precautions must be taken to reject insect-damaged or early-split nuts because they are associated with a high risk of aflatoxin contamination.

40. For nut varieties that are traditionally preconditioned with moisture (steam or water of potable quality) to reduce kernel breakage during cracking, the moisture level of the kernels after cracking should be lowered immediately, to a level that will not support the growth of fungi by rapidly circulating dry air through the kernels.

41. The finished processed products (raw, shelled or in-shell, bulk or consumer ready) should be of the appropriate moisture and packaged so as to maintain their quality under normal transportation and storage conditions without significant deterioration by decay, mould, or enzymatic changes.

42. It is desirable that each plant has access to quality control facilities. The amount and type of such control will vary with different nut products as well as the needs of management. Some type of screening or recognized analytical procedure should be used to determine aflatoxin levels and preferable moisture content before products are released from the processing facility.

2.7 TRANSPORT OF PROCESSED NUTS TO STORAGE

43. Transport containers should be clean, dry, and free of visible fungal growth, insects and any contaminated material. The containers should be well constructed to withstand handling abuse without breaking or puncturing, and tightly sealed to prevent any access of dust, fungal spores, insects or other foreign material.

44. The nuts should be transferred from transport containers to the storage facility as soon as practicable. If different lots or sub-lots are transported together, they must be physically separated in a way that will ensure that lot identification is maintained. The lots must be indelibly marked with an identification number that can be traced back to the accompanying documentation.

2.8 STORAGE

45. Storage facilities should be dry (i.e. relative humidity < 70%), well-vented structures that provide protection from rain, entry of rodents and birds, drainage of ground water and have minimum temperature and humidity fluctuations. Optimally, temperature should be kept between 0ºC and 10ºC to minimize fungal growth during storage.

46. Good storage practices should be implemented to minimize the levels of insects and fungi in storage facilities. This may include the use of suitable, registered insecticides and fungicides or appropriate alternative methods. Nuts stored in sacks should be placed on pallets to allow good ventilation.

47. Water activity, which varies with moisture content and temperature, should be carefully controlled during storage. *Aspergillus flavus/A. parasiticus* cannot grow or produce aflatoxins at water activities less than 0.7.

48. Consideration should be given to fumigating nuts as they are removed from storage for export to control any storage pests that may be present and to prevent infestation during shipment.

3. SPECIAL CONDITIONS FOR SPECIFIC NUT SPECIES

3.1 PISTACHIO NUTS

49. Pistachio nuts are exposed to airborne fungal spores while in the field, during harvesting and/or processing. When the nuts are still on the tree, sometimes the outer hull splits when the shell splits open (early-splits) and sometimes the hull is damaged by wind, insects or other pests. If insects or other pest damages the nut shell, then conditions exist for *Aspergillus* spores to invade and grow on the inner kernel and potentially produce aflatoxins.

50. During the growing season, growers should irrigate carefully and in good time to limit early splitting of the outer hull and reduce the risk of aflatoxin contamination. The mature nuts should be harvested early to reduce the chance for contamination since there is a greater chance that the outer hull will remain intact. The nuts should be delivered directly to the plant for hulling and drying within 24 hours of harvest to prevent shell staining.

3.2 BRAZIL NUTS

51. After the outer casings are broken open, the fractured nuts should be eliminated When pods have been opened in the area, the nuts should not be in contact with the soil without any cover. Ideally the transportation of nuts should be undertaken within 6-7 days. During storage, the nuts shouldn't be exposed to attack by rodents or other animals which may lead to damage to the shells of the nuts, possibly allowing entry of any mould to the nut kernel. Processing of the product should again ideally begin within 1 week after arrival at the processing facility.

4. A COMPLEMENTARY MANAGEMENT SYSTEM TO CONSIDER IN THE FUTURE

52. The Hazard Analysis Critical Control Point (HACCP) system is a food safety management system that is used to identify and control hazards within the production and processing system. The general principles of HACCP have been described in earlier documents.[3, 4]

53. The HACCP concept is an all-encompassing integrated management system. When properly implemented in the tree nut industry, this system should result in a reduction in the levels of aflatoxins observed in tree nuts. The use of HACCP as a food safety management system has many benefits over other types of management control systems used in some segments of the food industry. In orchards, many factors that influence aflatoxin contamination of tree nuts are environmentally related, such as weather and insects; these are difficult or impossible to control. After harvesting, critical control points may be identified for aflatoxins produced by fungi during storage. For example, a critical control point could be at the end of the drying process and one critical limit would be the moisture content or water activity.

54. Good Agricultural Practices (GAPs), Good Manufacturing Practices (GMPs) and Good Storage Practices (GSPs) are programs that should be in place before attempts are made to establish and implement a HACCP system. A manual on the application of the HACCP system for mycotoxin prevention and control was recently published that included a plan developed for controlling aflatoxins in pistachio nuts in S.W. Asia[5]. It is recommended that tree nut producers, processors and others involved in the tree nut industry review this example, the concepts of which should be applicable to all tree nuts.

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3 FAO. 1995. The use of hazard analysis critical control points (HACCP) principles in food control. FAO Food and Nutrition Paper No. 58 Rome.

4 ILSI, 1997. A simple guide to understanding and applying the hazard analysis critical control point concept, ILSI Europe Concise Monograph Series, 2nd edition, ILSI Europe, Brussels.

5 FAO/IAEA training and reference center for food and pesticide control, 2002. Manuel on the Application of the HACCP System in Mycotoxin Prevention and Control. FAO Food and Nutrition Paper No. 73, Rome.

55. At the Third International Conference on Mycotoxins, which was held in Tunisia in March 1999, one of the general recommendations was that integrated mycotoxin control programs should incorporate HACCP principles in the control of risks associated with mycotoxin contamination of foods and feeds[6]. The implementation of HACCP principles will minimize aflatoxin contamination through applications of preventive controls to the extent feasible in the production, handling, storage and processing of each tree nut crop. Since all countries may not have the required technical expertise and experience to establish effective integrated mycotoxin management systems, the Food and Agriculture Organization (FAO) has given high priority to the provision of training professionals in developing countries on the HACCP approach and its application.

[6] FAO. Preventing Mycotoxin Contamination. Food, Nutrition and Agriculture No. 23, 1999. Food and Nutrition Division, FAO, Rome.

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF INORGANIC TIN CONTAMINATION IN CANNED FOODS

(AT STEP 5 OF THE PROCEDURE)

INTRODUCTION

HISTORY OF USE OF TIN

1. Tin is a soft, white, lustrous metal with an atomic weight of 118.7 and the chemical symbol Sn after its Latin name, Stannum. It has a relatively low melting point [231.9^{o}C] and is highly resistant to corrosion, which makes it an ideal element for the protective coating of metals. Over 50% of the world's tin production is used for plating steel or other metals.

2. Today some 15 million tonnes of tinplate are produced each year using rapid and highly sophisticated production methods. These methods are able to control steel thicknesses and tin coating masses to within the extremely fine tolerances required for modern can making processes such as high speed welding.

TIN AS PACKAGING FOR CANNED FOOD

3. Tin is used to protect the steel base from corrosion both externally [aerobic conditions] and internally when in contact with foods [anaerobic]. Under the anaerobic conditions expected inside an internally plain processed food can, tin will normally behave as the sacrificial anode, dissolving very slowly whilst protecting the steel base from corrosion and creating a reducing environment in the can. It is this mechanism that has enabled the plain tinplate can to maintain its long history and proven track record of providing wholesome food on a year round basis and safe storage for long periods of time.

4. The later development of can linings [lacquers] enabled different types of food products to be satisfactorily packed. For example, some highly pigmented foods [beetroot, berry fruits] have their colours bleached by tin dissolution and are best protected from contact with tin by use of linings. A small number of food products [e.g. sauerkraut] have a different corrosion mechanism, in which the tin does not behave sacrificially and direct corrosion of the steel base can occur. These products should also have the additional protection of an internal lacquer system.

5. The uses of tin have changed considerably over the years. Humans have, however, been exposed to tin for centuries, through the food they eat, with no known negative long term effects. Only limited data is available on the toxicological effects of inorganic tin as present in canned foods, resultant from dissolution of the tin coating. The main potential hazard from acute ingestion seems to be gastric irritation in some individuals from exposure to high levels.

6. Hence the canning industry worldwide and government regulators consider it both desirable and in accordance with good manufacturing practice that measures be adopted to minimise the levels of tin in canned foods, whilst continuing to allow for the functional use of plain tinplate cans.

TECHNOLOGICAL AND COMMERCIAL IMPLICATIONS

7. Metal packaging faces strong competition from glass and plastics. Even with innovations such as easy opening tear top cans, metal containers are below the average growth of marketshare for packaging products.

8. The best solution to prevent or reduce detinning of cans by aggressive foods is internal lacquering. The use of lacquers has permitted the extension of the use of cans to additional products, including highly aggressive ones.

9. The coating thickness greatly affects the performance of the lacquered food can. Non-aggressive products such as apricots and beans require a thickness of 4-6µm while tomato concentrate needs layers of 8-12µm to prevent interaction between the can and its contents.

10. Adhesion is required to prevent reactions between the can and its contents. Currently adhesion is tested by measuring the force required to lift a dry lacquer coating from the metal in a peel test. While this test readily identifies films which are unsuitable there is no guarantee that those which pass would give satisfactory long term results when in contact with specific foods.

11. Toxicologically significant contamination of canned food from tin dissolution may arise as a result of poor manufacturing practices or prolonged/incorrect storage or both.

12. Although lacquering of cans significantly reduces the risk of tinplate corrosion, the use of lacquer coatings is not always practicable or cost effective.

13. It could be argued that "since lined cans are readily available, then why not use them for all canned foods and thus prevent any tin uptake?" There are, however, very valid technical and marketing reasons why some products require to be packed into plain cans.

FLAVOUR AND COLOUR

14. The need for tin dissolution to maintain the desired colour and flavour attributes of products such as asparagus, light coloured fruits and juices and tomato based products has long been established. It is believed that the presence of tin creates a reducing atmosphere in the can preventing undesirable oxidative changes in these products, which would otherwise develop brown discolourations and unacceptable flavours. Such quality loss would severely affect their marketability and sales with significant implications for the canning industry and their suppliers.

15. It is interesting to note that this concept also works in reverse – some highly pigmented foods, such as acidified beetroot and berry fruits, must always be packed into fully lined cans because, apart from their aggressive behaviour towards tin, colour bleaching via tin dissolution can be a significant problem.

CORROSION FACTORS

16. Most of the products normally packed into plain cans are relatively high acid products. In addition to the organoleptic considerations, should these products be packed into lined cans a change of corrosion mechanism would result. For the more aggressive products this would result in a greater tendency for underfilm corrosion/delamination (particularly for tomato products) and to pitting corrosion of the steel base and subsequent implications of potential for perforation failure.

17. The tin level is dependent on a large number of factors, many of which relate to natural variations or occur after the can has left the control of the manufacturer:

CORROSION MECHANISMS

18. With respect to the internal tinplate surface of cans, there are four main corrosion mechanisms:

(i) Normal detinning;

(ii) Rapid detinning;

(iii) Partial detinning; and,

(iv) Pitting.

19. **Normal detinning** is the slow corrosion of the tin coating, and is an essential process in plain cans to provide electrochemical protection to any exposed areas of base steel. This process leads initially to etching of the tinplate and much later to detinning of the surface. Normally, etching should occur evenly over the wetted internal surface of the can; in the first month or so the mirror surface should change to one in which the shape of the individual tin crystals may be seen with the eye. Grey detinned areas should not be evident in cans stored for less than 1.5 –2 years. Under normal detinning conditions tin is anodic to steel and offers complete cathodic protection. Dissolved tin enters into unobtrusive complexes with product constituents. The hydrogen is oxidised by depolarisers or diffuses through the steel wall. This corrosion situation is characteristic of some citric products, stone fruit products and most low-acid products.

20. **Rapid detinning** is caused by the use of plate with a tin coating mass that is too light, or by a product that is intrinsically too corrosive or contains corrosive accelerators. Whilst the tin is sufficiently anodic to protect steel, the electrochemical rate is high, often resulting in hydrogen evolution and early product failure. Nitrate in products with pH less than 6 has been implicated in incidents of rapid detinning. This is one type of mechanism for rapid detinning. The other is 'direct attack on the tin'. No hydrogen forms, can vacuum remain unchanged. Examples are depolarizes like nitrate, oxygen, and sulphite. Certain azo dyes, anthocyanins, phosphates and dehydroascorbic acid have also been implicated in rapid detinning.

21. **Partial detinning** together with pitting is a rare form of corrosion. Tin is anodic to steel but localised anodes develop on exposed steel causing iron dissolution (pitting). Early failure takes place due to hydrogen swelling or to perforation at the sites of pitting. This mode of corrosion occurs with tinplate with poor corrosion resistance, or in certain products that have high corrosivity, such as prunes and pear nectar.

22. **Pitting** corrosion occurs when the normal tinplate tin/iron couple is reversed and iron becomes anodic to tin. Tinplates containing high arsenic levels can promote pitting corrosion in can products containing corrosion accelerators. Preferential absorption of protective substance onto the tin surface, such as can occur in sauerkraut, leads to pitting. Products formulated with acetic or phosphoric acids have also suffered spoilage losses due to pitting. Perforation and hydrogen swells occur within a year in such products. Products containing copper and nickel residues can promote pitting corrosion. Products containing proteins and associated amino acids can produce sulphur compounds during heating, including mercaptans, sulphide ions and hydrosulphide ions which readily react with tin to cover the metal surface with thin layers of tin sulphides. Tin sulphides films reduce the passivity of the tinplate surface and may promote pitting corrosion of the base steel.

CORROSION INHIBITORS

23. **Passivation** refers to the chemical treatment applied after tin deposition which stabilises the surface characteristics of tinplate by controlling tin oxide formation and growth; two levels of passivation are usually available – cathodic dichromate [CDC] is the higher level and the treatment usually applied

FOOD CHEMISTRY

24. The most obvious influence on internal corrosion in plain tinplate cans is the chemistry of the food product. It should be noted that fruits, vegetables and tomatoes will have significant natural variation in, for example, pH and acid type and concentration, dependent on variety, maturity, time/place/conditions of harvest, soil chemistry and agricultural practices. These are difficult for the canner to control and may ultimately impact on the level of tin uptake by the product.

CORROSION ACCELERATORS

25. The presence of a chemical species with the ability to accept electrons will increase the rate of corrosion. Some products may contain such 'depolarisers' which will accelerate tin dissolution. Good process control by the canners helps to minimize the presence of headspace oxygen and the presence of oxidizing agents like nitrates and sulfites which can accelerate tin dissolution.

STORAGE TEMPERATURE

26. A further significant factor influencing tin levels is the length and temperature of storage subsequent to canning. Tin uptake will increase with time and most products exhibit first order reaction rates where the rate of dissolution doubles for every 10^{o}C rise in temperature.

1. SCOPE

27. Whilst there are other sources of tin exposure in humans, the most common route is via ingestion of inorganic tin from canned foods.

28. This code of practice relates solely to the migration of inorganic tin into foods from the internally plain (i.e. not lacquered) tin coating of tinplate cans.

29. This code of practice is not intended to apply to tin exposure from any other source and is specific to inorganic tin.

30. This code of practice relates to thermally processed canned human foods (including fruit and vegetable juices) which are packed into plain tinplate cans. It is considered that this description covers both:

(i) Hot fill and hold products; and,

(ii) Hot or cold fill and retort products.

31. Dry goods and 100% oil products are not included, because they do not experience tin migration.

2. RECOMMENDED PRACTICES TO MINIMISE TIN UPTAKE BY FOODS PACKED INTO PLAIN TINPLATE CANS

32. There are many factors which may influence the level of product tin uptake in plain tinplate cans. Some are very minor and others, usually specific to the chemistry of the processed food, may have a significant effect on internal can corrosion and product tin dissolution. The recommendations contained below are based on an attempt to identify all of these factors, no matter how minor, and to suggest specific areas where monitoring or other controls would be beneficial.

33. In summary the factors which have been identified can be grouped as follows:

(i) Choice of tin coating mass and passivation level;

(ii) Damage to tin coating or passivation;

(iii) Type of food product, pH and acid content;

(iv) Presence of corrosion accelerators, such as nitrates, in the raw food ingredients;

(v) Presence of sulphur compounds in the food;

(vi) Presence of oxygen within the sealed can;

(vii) Process times and temperatures;

(viii) Storage times and temperatures; and,

(ix) Storage humidity.

2.1 PACKAGING MANUFACTURER

2.1.1 Tinplate Supplier

34. Tinplate customers should state the end use when ordering tinplate. The tinplate supplier should have sufficient expertise to ensure that specifications for the tinplate are appropriate to the stated end use and notify the customer should there be any concerns (e.g. with regard to the passivation level or the requested tin coating mass).

35. The tinplate manufacturer should have quality procedures in place to ensure that every tinplate order conforms to the required standard (e.g. ASTM; ISO etc.). Incorrect tin coating masses or passivation levels could result in abnormal corrosion and increased product tin levels. Low oil levels may lead to abrasive damage to the tin coating during transport and can manufacture.

2.1.2 Can Maker

36. Can makers should approve tinplate suppliers on the basis that each supplier has demonstrated compliance to agreed standards and ordering requirements.

37. The can maker should have sufficient expertise to ensure that the customer's ordering requirements (i.e. passivation and tin coating mass) are appropriate for the end use and should notify the customer of any concerns.

38. The can maker should assist the customer in determining the correct can specification for any new food product or recipe change. Such changes should be tested to ensure that product tin uptakes are not excessive.

39. Machine settings for processes where metal working occurs (e.g. beading) should be such as to minimise damage to the tin coating.

40. If a sidestripe is applied to 3 piece cans then excessive heat should be avoided when curing the stripe.

2.2 THE CANNER

2.2.1 Raw Materials

41. The canner should work closely with the can supplier to ensure an appropriately specified can is supplied for any given application. Procedures should be in place to ensure that cans are supplied to specification.

42. The canner should consult with the can maker to determine the correct specification can for any new product or any recipe change of an existing product. It is extremely important that sufficient pack testing is conducted to gain a thorough knowledge of the corrosion mechanism, likely product tin uptakes and overall suitability of the can specification for the product.

43. Canners should be knowledgeable about the shelf life of all their products with respect to likely tin uptakes. It should be noted that fruits and vegetables in particular may have a significant variation in their chemistry, dependent on variety, maturity, time/place/conditions of harvest, soil chemistry and agricultural practices. These are difficult for the canner to control and may ultimately impact on the level of tin uptake by the product.

44. Quality procedures should be in place to ensure that product batches conform to recipe specification.

45. Particular attention should be paid to the pH of the food and the addition of food acids. It should be recognised that corrosion is pH dependent and that too large a drop in pH may give a significant change in corrosive behaviour and tin uptake. Different food acids (e.g. citric, malic fumaric and acetic) behave in different ways with respect to internal corrosion and any ingredient change from one type of acid to another should be thoroughly tested. Acetic acid is particularly aggressive towards tin.

46. The presence of a chemical species with the ability to accept electrons will increase the rate of the corrosion reaction. Nitrate is a corrosion accelerator and its presence, even at low levels (1mg of NO_3^- will yield nearly 8mg of Sn^{2+}) causes rapid de-tinning. In a 400g can, 10mg of NO_3^- will rapidly react to give approximately 80mg of Sn^{2+} or, in other words, a product tin concentration of 200ppm. In about one year 100 ppm of nitrate will completely de-tin a No. 303 can with an inside coating weight of 11.2 g/m^2. Nitrates originate from over zealous use of fertilizers and some fruits and vegetables can accumulate high levels (e.g. tomatoes and pineapples). It is essential, when nitrates are likely to be a problem that the canned food manufacturer and his suppliers have a system in place to ensure fruits, vegetables and other ingredients are acceptable for use in canning.

47. Sulphur residues have also been known to cause corrosion problems in plain tinplate cans. These residues can be of agricultural origin or may have resulted from bleaching or preserving agents used in some ingredients. The canned food manufacturer and his suppliers should again carry out any necessary testing and make sure that the raw materials are fit for purpose.

48. Some foods, especially protein rich meat and fish and, to a lesser extent, vegetables (e.g. peas, beans, corn etc.) contain naturally occurring sulphur compounds. These can react with a plain tinplate surface to give a purple-black stain of tin sulphide. Although the stain is harmless, it may serve to change the passivation of the tinplate surface, which, in turn, could alter the rate of tin uptake. The areas of staining may also be localised – stressed areas such as can beads; contact points with a solid product in a liquid medium; headspace/product line interface. Whilst an overall increase in passivation is more likely to slow tin uptake, localised areas of staining can have a detrimental effect, especially if a corrosion accelerator such as oxygen is also present. Degree of sulphide staining is also influenced by pH, process time and temperature and the presence of certain cations. Al^{3+} and Fe^{3+}, Fe^{2+} ions, found in some treated potable water, act as catalysts for the breakdown of naturally occurring sulphur compounds. Subsequently the presence of these ions increases the rate and severity of sulphide staining. Clearly the canner must have an intimate knowledge of his product; the likely variations that could occur in raw materials and process; and the range of effects that these variations could produce within the can. That knowledge should be used to set controls where necessary and to determine consistent supply.

49. All raw materials from all suppliers should be well documented especially when a supplier is changed or a raw material is obtained from another source or location. In the unlikely event that unexpectedly high product tin levels occur, documentation makes it easier to track back to any specific changes and to take appropriate action.

50. Water quality should be monitored as some water supplies may contain corrosion accelerators such as nitrates.

2.2.2 Processing

51. The canned food manufacturer should take all necessary steps to eliminate oxygen from within the can prior to closing and to ensure an adequate can vacuum. Oxygen is a corrosion accelerator and its presence in a can after closing can lead to early tin dissolution, especially from the headspace area. Oxygen can be present in the interstices of the product and steam exhausting plus a high fill temperature will help its removal. Minimising headspace, whilst still allowing for product expansion, also helps eliminate oxygen. Another control method is closing under vacuum. Steam injection to the headspace must be consistent and controlled. Line stops and delays between filler and closer should be avoided.

52. The primary method used for removing oxygen is closing under vacuum. Steam exhausting is not used as much.

53. Chemical reactions, such as corrosion, are accelerated by increasing temperature. Canners should be aware that excessive processing times at high temperatures may have an effect on advancing tin uptake.

54. Inadequate cooling and drying should be avoided because this means, for a large mass of cans, that they will remain at an elevated temperature for a considerable period of time. Cans should be cooled to 35°-38°C. Cans cooled to a lower temperature may not dry adequately leading to external rusting. Cans that are not adequately cooled can be subject to spoilage by thermophilic bacteria or products may suffer a loss in quality.

2.2.3 Finished Goods Storage

55. Internal can corrosion, like any chemical reaction, is temperature dependent. In general for every 10^{o}C rise in temperature the reaction rate will double. The expected level of tin uptake from a can stored at high temperature (i.e. 40°C) would be significantly higher than from a can stored at lower temperature (i.e. 10°C) for the same period of time. Canned food manufacturers should consider the location of their finished goods storage areas when determining maximum storage times. For example: - what is the likely maximum temperature; are some areas heated more by the sun; how many days per annum at relatively high temperatures etc?

56. Stock control is required to ensure finished canned goods from earlier production dates are used first.

57. Warehousing be done under conditions where the temperature can be controlled. Large swings in temperature can lead to condensation of moisture on the exterior of cans which can lead to rusting.

2.2.4 Other Considerations

58. Can damage should be minimised as this can lead to local areas of de-tinning. For this reason it is preferable to use ink jet coding rather than embossing.

2.3 TRANSPORT AND WAREHOUSING

59. Please refer to paragraphs 56 and 57 in Section 2.2.3 Finished Goods Storage**.**

60. Temperatures encountered during Transport need to be considered if the canned goods are likely to remain at these temperatures for any length of time [i.e. during shipping]. If possible, it is preferable to export stock from a more recent production date if high temperatures are likely to be encountered during shipping or at the final destination.

2.4 RETAILER

61. The retailer should maintain correct stock rotation to ensure that shelves are stocked with cans in production date sequence.

2.5 CONSUMER

62. The consumer should choose a storage location for canned foods that is not subject to excessive heat. Cupboards should not be close to ovens or heaters and should preferably not be in direct sunlight.

63. Unused food or juice left in plain tinplate cans may rapidly accumulate tin in the presence of air. It should be transferred immediately to a clean plastic or glass container and stored in the refrigerator.

GLOSSARY OF TERMS

64. This glossary defines the main technical terms used in the preceding code and relates specifically to the tinplate, can making and canning industries.

AEROBIC	presence of oxygen.
ANAEROBIC	absence of oxygen.
ANNEALING	heating process used in tinplate manufacture to soften the steel strip after cold rolling and to impart the required hardness; the process can either be continuous (continuous annealing or CA) or in batches (batch annealing or BA).
BA	see **ANNEALING.**
BEADS; BEADING	corrugations rolled into can walls to give added strength to the can body.
CA	see **ANNEALING.**
CAN LININGS	see **LACQUERS.**
CLOSER	machine used to seal an end onto a can.
CLOSING UNDER VACUUM	applying a vacuum to the closing chamber of the can closer, whilst sealing the end.
CORROSION	chemical action of dissolving the surface of a metal (eg. tin in food medium).
CORROSION ACCELERATOR	chemical species with the ability to accept electrons, which will increase the rate of a corrosion reaction.
CORROSION MECHANISM	specific chemistry of any corrosion reaction; especially for tinplate when 2 metals (tin and iron) are coupled and where one or both has the potential to dissolve.
DETINNING	descriptive of the corrosion process where the internally plain tin coating is slowly dissolved by the food medium; rapid detinning refers to abnormally fast tin dissolution, caused by the presence of corrosion accelerators.
DR TINPLATE	'double reduced' tinplate where a second rolling is used to reduce steel thickness in order to produce a thinner but stronger product.
ELECTROLYTE	substance which dissociates into ions when dissolved in a suitable medium; hence a tin rich electrolyte is used in tinplate manufacture (see **ELETRO-TINNING**); the food in contact with an internally plain can may also be described as an electrolyte.
ELECTROLYTIC TINPLATE	low carbon mild steel strip coated on both top and bottom surfaces with an electrolytic deposition of tin; the deposited tin exists as an alloyed and free tin and has a passivated surface as well as a coating of oil.
ELECTRO-TINNING	act of plating tin from a tin rich electrolyte onto a continuous steel strip to produce electrolytic tinplate.
ELECTRO-PLATING	see **ELECTRO-TINNING.**
EMBOSSING	use of a die to stamp a product code or manufacturing date into a can end

ENVIRONMENT	see **REDUCING ENVIRONMENT.**
FILLER	machine used to automatically fill a can with the desired weight or volume of food.
FILL TEMPERATURE	temperature at which the food is filled into the can.
FOOD ACIDS	organic acids, naturally occurring in foods, especially in fruits and vegetables; also used to impart flavour and to modify the pH of foods.
HEADSPACE	space left in the top of the can after filling and end sealing, in order to allow for product expansion during thermal processing.
HOT FILL AND HOLD	process where a high acid food product [usually juice or liquid] is filled at high temperature, the end sealed and cans held for a period of time before cooling; commercial sterility is achieved without retort processing.
INKJET CODING	use of an ink jet to print a product code or manufacturing date on the can end
INTERNAL CORROSION	corrosion occurring within a food can (see **CORROSION**).
ION	electrically charged (positive or negative) atom or molecule formed by the loss or gain of one or more electrons or by dissolving an electrolyte in a solvent.
LACQUERED TINPLATE	see **LACQUERS.**
LACQUERS	inert organic coatings used to give additional protection to tinplate; usually applied in liquid form and 'cured' at high temperatures.
LININGS	see **LACQUERS.**
PACK TESTING	storage and regular sampling of canned foods under controlled temperature conditions to determine internal corrosion characteristics and potential shelf life.
pH	measure of acidity.
PLAIN CANS	cans made from plain tinplate.
PLAIN TINPLATE	bright tinplate without any additional lacquer coating.
PROCESS TEMPERATURE	see **PROCESS TIME.**
PROCESS TIME	the calculated time at a particular temperature (process temperature) for which a specific can size and food product need to be heated in order to achieve commercial sterility.
PRODUCT LINE	maximum level or height of the product in the can; the headspace is above the product line.
RAPID DETINNING	see **DETINNING.**
REDUCING ENVIRONMENT	conditions expected inside a plain processed food can, whereby the contents are protected from oxidative reactions such as colour change.

RETORTING	method of heating cans, usually under steam pressure, to create internal can temperatures well in excess of 100^{o}C in order to achieve commercial sterility in a shortened period of time; retorts are, in effect, very large pressure cookers.
RETORT PROCESSING	see **RETORTING.**
SACRIFICIAL ANODE	refers to a metal which slowly dissolves in a corrosion reaction and, in so doing, protects a second metal from corrosion (eg. tin behaving as the sacrificial anode to protect the coupled steel base); see also **CORROSION MECHANISM.**
SHELF LIFE	the expected acceptable commercial life of any canned food.
SHELF LIFE TESTING	see **PACK TESTING.**
SIDESTRIPE	thin band of lacquer designed to protect the weld of a can body from corrosion.
STEAM EXHAUSTING	passing filled cans through a tunnel of steam, prior to sealing, to assist in oxygen removal from the product and headspace.
STEEL BASE	low carbon mild steel strip to which the tin coating is electrolytically applied.
STOCK ROTATION	method of ensuring the oldest canned products are identified, removed first from warehouse storage and are first onto the retailers shelf.
SULPHIDE STAINING	where naturally occurring sulphur compounds in foods react with a plain tinplate surface to form a purple-black stain of tin sulphide.
THERMAL PROCESSING	use of any heat process to ensure the commercial sterility of filled cans (see also **HOT FILL AND HOLD** and **RETORTING).**
TIN COATING	See **ELECTROLYTIC TINPLATE.**
TIN COATING MASS	mass of tin, expressed in g/m^2 , which is applied to each side of the steel base; standard coating masses generally range from 2.8 to 11.2g/m^2 in increments of 2.8g/m^2; the internal tin coating mass of plain cans is usually either 8.4 or 11.2g/m^2.
TIN MIGRATION	see **CORROSION** and **DETINNING.**
TINPLATE	see **ELECTROLYTIC TINPLATE.**

PROPOSED DRAFT REVISED GUIDELINE LEVELS FOR RADIONUCLIDES IN FOODS FOR USE IN INTERNATIONAL TRADE

(AT STEP 5 OF THE PROCEDURE)

TABLE 1
GUIDELINE LEVELS (IN BQ/KG) FOR RADIONUCLIDES IN FOODS

Radionuclides in foods	Guideline Level (Bq/kg)
^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Am	1
^{90}Sr, ^{106}Ru, ^{129}I, ^{131}I, ^{235}U	100
^{35}S, ^{60}Co, ^{89}Sr, ^{103}Ru, ^{134}Cs, ^{137}Cs, ^{144}Ce, ^{192}Ir	1000
^{3}H*, ^{14}C, ^{99}Tc	10000

* This represents the most conservative value for tritium (organically bound).

Scope: The Guideline Levels apply to radionuclides contained in foods destined for human consumption and traded internationally, which are inherently contained in the food or have been incorporated into the food from any source. These guideline levels apply to food after reconstitution or as prepared for consumption, i.e., not to dried or concentrated foods, and are based on an intervention exemption level of around 1 mSv in a year.

Application: As far as generic radiological protection of food consumers is concerned, when radionuclide levels in food do not exceed the corresponding Guideline Levels, the food should be considered as safe for human consumption. When the Guideline Levels are exceeded, national governments shall decide whether and under what circumstances the food should be distributed within their territory or jurisdiction. National governments may wish to adopt different values for internal use within their own territories where the assumptions concerning food distribution that have been made to derive the Guideline Levels may not apply, e.g., in the case of wide-spread radioactive contamination.

Radionuclides: The Guideline Levels do not include all radionuclides. Radionuclides included are those important for uptake into the food chain; are usually contained in nuclear installations or used as a radiation source in large enough quantities to be significant potential contributors to levels in foods; are routinely discharged or could be accidentally released into the environment from typical installations or used in applications or might conceptually be employed in malevolent actions. Radionuclides of natural origin are generally excluded from consideration in this document.

In Table 1, the radionuclides are grouped according to the guideline levels rounded logarithmically by orders of magnitude. The guideline levels have been checked against age-dependent ingestion dose coefficients defined as committed effective doses per unit intake for each radionuclide, which are taken from the "International Basic Safety Standards" (IAEA, 1996)[1].

Multiple radionuclides in foods: The guideline levels have extensive conservative assumptions built-in and therefore there is no need to add contributions from radionuclides in different groups. Each group should be treated independently. However, the activity concentrations of each radionuclide within the same group should be added together[2].

Small quantity or concentrated foods: Special considerations apply to certain classes of food which are consumed in small quantities (at most a few percent of total diet), such as spices. If such foods represent a small percentage of total diet and hence a small addition to the total dose, the Guideline Levels for these foods may be increased by a factor of 10, in accordance with the internationally agreed basic safety standards (IAEA, 1996).

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1 Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Labour Office, OECD Nuclear Energy Agency, Pan American Health Organization, World Health Organization (1996) International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, IAEA, Vienna.

2 For example, if ^{134}Cs and ^{137}Cs are contaminants in food, the guideline level of 1000 Bq/kg refers to the summed activity of both these radionuclides.

SCIENTIFIC JUSTIFICATION FOR PROPOSED DRAFT GUIDELINE LEVELS FOR RADIONUCLIDES IN FOODS[3]

The proposed draft Guideline Levels for Radionuclides in Foods and specifically the values presented in Table 1 above are based on the following general radiological considerations and experience of application of the existing international and national standards for control of radionuclides in food.

Infants and adults: As presented in the attached appendices, significant improvements in the assessment of radiation doses resulting from the human intake of radioactive substances have become available since the Guideline Levels were issued by the Codex Alimentarius Commission in 1989 (CAC/GL 5-1989). The levels of human exposure resulting from consumption of foods containing radionuclides listed in Table 1 at the suggested guideline levels have been assessed both for adults and infants and checked for compliance with the appropriate dose criterion. As a result, the present Guideline Levels, in Table 1 are relevant to all kinds of foods destined for human consumption and traded internationally, including infant foods.

In order to assess public exposure and the associated health risks from intake of radionuclides in food, estimates of food consumption rates and ingestion dose coefficients are needed. According to Ref. (WHO, 1988) it is assumed that 550 kg of food is consumed by an adult in a year. The value of infant food and milk consumption during first year of life used for infant dose calculation equal to 200 kg is based on contemporary human habit assessments (F. Luykx, IAEA-SM-306/120, 1990; US DoH, 1998; NRPB-W41, 2003). The most conservative values of the radionuclide-specific and age-specific ingestion dose coefficients, i.e. relevant to the most absorbed from the gastro-intestinal tract chemical forms of radionuclides, are taken from the (IAEA, 1996).

Radiological criterion: The appropriate radiological criterion, which has been used for comparison with the dose assessment data below, is a generic intervention exemption level of around 1 mSv for individual annual dose from radionuclides in major commodities, e.g. food, recommended by the International Commission on Radiological Protection as safe for members of the public (ICRP, 1999)[4].

Naturally occurring radionuclides: Radionuclides of natural origin are ubiquitous and as a consequence are present in all foodstuffs to varying degrees. Radiation doses from the consumption of foodstuffs range from a few tens to a few hundreds of microsieverts in a year. In essence, the doses from these radionuclides when naturally present in the diet are unamenable to control; the resources that would be required to affect exposures would be out of proportion to the benefits achieved for health. Therefore, these radionuclides are excluded from consideration in this document.

One-year exposure assessment: It is conservatively assumed that during the first year after a major environmental radioactive contamination caused by a nuclear or radiological event[5] it might be difficult to replace readily foods imported from contaminated regions with the ones imported from unaffected areas. According to FAO statistical data (see Annex 1) the mean fraction of major foodstuff quantities imported by all the countries worldwide is 0.1. The values in Table 1 have been derived to ensure that if a country continues to import all the major foods from areas contaminated with radionuclides, the mean annual internal dose of its inhabitants will not exceed around 1 mSv (see Annex 2). As the assessment has extensive conservative assumptions built-in, the result should be considered as the upper level of the possible dose range.

Long-term exposure assessment: Beyond one year after a major environmental contamination with radionuclides, most of the foods imported from areas with radioactive residues will be replaced with the ones imported from unaffected areas. However, foods contaminated with radionuclides may be still imported occasionally.

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3 The Codex Alimentarius Commission at its 18th Session (Geneva 1989) adopted Guideline Levels for Radionuclides in Foods Following Accidental Nuclear Contamination for Use in International Trade (CAC/GL 5-1989) applicable for six radionuclides (^{90}Sr, ^{131}I, ^{137}Cs, ^{134}Cs, ^{239}Pu and ^{241}Am) during one year after the nuclear accident.

4 International Commission on Radiological Protection (1999). Principles for the Protection of the Public in Situations of Prolonged Exposure. ICRP Publication 82, Annals of the ICRP.

5 In this document, nuclear or radiological event means nuclear or radiological emergency or terrorist situation involving nuclear facility or major radiation source.

The estimated level of public exposure can be assessed taking account of import/production statistics. Based on FAO statistical data, the worldwide mean value of the import/production factor can be set at 0.0001-0.001 (see Annex 1). Thus, for a country occasionally importing foods from areas with radioactive residues, the mean annual effective internal dose to its inhabitants is estimated to be no more than around 10 μSv (see Annex 2), which is considered to give trivial health risk to the individual (ICRP, 1991; IAEA, 1988, 1996). As the assessment has extensive conservative assumptions built-in, the result should be considered as the upper level of the possible dose range.

Health risk estimation: Owing to the extremely conservative assumptions adopted, it is most unlikely that the application of the Guideline Levels would result in a committed effective dose from consumption of foods during first year after a major nuclear or radiological event to any individual exceeding a small fraction of 1 mSv. This would add a lifetime risk of death from a radiation-induced cancer of no more than about 10^{-5}.

In the case of a nuclear reactor accident, the release of ^{131}I may present a risk of thyroid cancer. When ^{131}I levels in foods due to short-term accidental release comply with the Guideline Levels, the resulting thyroid dose would not exceed 20 mGy both in infants and in adults. These exposures would add a lifetime risk of radiation-induced thyroid cancer induction for both age groups of no more than about 10^{-4}. The corresponding risk of death from a radiation-induced thyroid cancer is less than 10^{-5}.

The added lifetime risk of death from a radiation induced cancer to individuals consuming foodstuffs imported from areas with radioactive residues that comply with the Guideline Levels in Table 1 will be no more than 10^{-6} from one year of long-term consumption. The corresponding lifetime risks from the consumption of such foodstuffs year by year over a lifetime would be substantially less than 10^{-4}.

ANNEX 1

ESTIMATION OF THE IMPORT/PRODUCTION FACTOR VALUES BASED ON FAO FOOD STATISTICS

The import/production factor (IPF_{CA}) is defined as the ratio of the amount of foodstuffs imported per year from areas contaminated with radionuclides (I_{CA}), to the total amount produced and imported ($P+I$) annually in the region or country under consideration:

$$IPF_{CA} = I_{CA} / (P+I)$$

Individuals may be considered to consume this proportion of contaminated imported food relative to the total amount of food consumed.

The region-specific or country-specific values of the IPF_{CA} can be determined based on local import and production statistics. In order to numerically estimate the worldwide mean contribution of imported food from areas contaminated with radionuclides, to total food production values needed for the present document, the statistical data on production, import and consumption of major foodstuffs worldwide from the FAOSTAT Food Balance Sheets[6], have been used.

Based on the FAOSTAT data for the recent 5-year period (1997-2001), the mean fraction of major foodstuff quantities (i.e., cereals, starchy roots, vegetables, fruit, meat, milk and fish&seafood) imported by all the countries worldwide (IPF_W), weighted by major foodstuffs consumption, is 0.11 which can be rounded to 0.1. The mean fractions for particular major foodstuffs range between 0.05 for vegetables and up to 0.27 for fish and seafood.

The contribution of food produced in areas affected by a major nuclear accident to the worldwide food import $(I_{CA}/I)_W$ can be assessed based on the experience of the Chernobyl accident which resulted in the radioactive contamination of large agricultural areas. In the three countries mostly affected by the Chernobyl accident (Belarus, Russia and Ukraine), 0.4% to 23% of their territories were significantly contaminated with radionuclides, i.e., above 37 kBq/sq.m (1 Ci/sq.km) of ^{137}Cs. These three countries yield in total about 5%, and their contaminated areas produce less than 0.2%, of major foodstuffs world produce. Taking into account the contribution of other European countries with the Chernobyl contaminated spots, this fraction can be estimated as being 0.3% and accounting for uncertainties ranged between 0.1% and 1% (10^{-3} to 10^{-2}).

As the worldwide mean fraction of imported food comprises about 0.1 of the produced and imported food, the mean fraction of food imported from areas contaminated with radionuclides due to major nuclear or radiological event $IPF_{CA,W}$ can be estimated as 10^{-4} to 10^{-3}.

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6 http://apps.fao.org/lim500/wrap.pl?FoodBalanceSheet&Domain=FoodBalanceSheet&Language=english

ANNEX 2

ASSESSMENT OF HUMAN INTERNAL EXPOSURE WHEN THE GUIDELINE LEVELS ARE APPLIED

For the purpose of assessment of the mean public exposure level in a country caused by the import of food products from foreign areas with residual radioactivity, in implementing the present guideline levels the following data should be used: annual food consumption rates for adults and infants, radionuclide- and age-dependent ingestion dose coefficients and the import/production factors as defined in Annex 1. When assessing the mean internal dose in infants and general public it is suggested that due to monitoring and inspection the radionuclide concentration in imported foods does not exceed the present guideline levels. Using cautious assessment approach it is considered that all the foodstuffs imported from foreign areas with residual radioactivity are contaminated with radionuclides at the present guideline levels.

Then, the mean internal dose of the public, ***E*** (mSv), due to annual consumption of imported foods containing radionuclides can be estimated using the following formula:

$$E = GL(A) \cdot M(A) \cdot e_{ing}(A) \cdot IPF$$

where:

GL(A) is the Guideline Level (Bq/kg)

M(A) is the age-dependent mass of food consumed per year (kg)

e_{ing}**(A)** is the age-dependent ingestion dose coefficient (mSv/Bq)

IPF is the import/production factor as defined in Annex 1 (dimensionless).

Assessment results presented in Table 2 both for infants and adults demonstrate that for most of twenty radionuclides under consideration, except of ^{14}C, ^{129}I, ^{134}Cs and ^{137}Cs, higher doses might be received by infants than for adults. However, for all the twenty radionuclides doses from consumption of imported foods during 1st year after major radioactive contamination do not exceed around 1 mSv and from annual consumption in the long term (beyond one year) do not exceed around 10 μSv.

For ^{239}Pu as well as for a number of other radionuclides (except of ^{3}H, ^{14}C, ^{35}S, iodine and caesium isotopes) the dose estimate is especially conservative because elevated gastro-intestinal tract absorption factors and associated ingestion dose coefficients are applied for the whole first year of life whereas this is valid mainly during suckling period recently estimated by ICRP to be as average first six months of life (ICRP Committee 2, to be published in 2004). For the subsequent six months of the first year of life the gut absorption factors are much lower.

As an example, dose assessment for the most topical case of ^{137}Cs in foods is presented below separately for the first year after the area contamination with this nuclide and for long-term exposure.

One-year exposure assessment

For the first year after a major environmental radioactive contamination it is conservatively assumed that it might be difficult to replace readily foods imported from contaminated regions with the ones imported from unaffected areas. Therefore, the mean worldwide value of the import/production factor equal to 0.1 (see Annex 1) is used for the mean dose estimation.

Cs-137:

For adults: $E = 1000 \text{ Bq/kg} \cdot 550 \text{ kg} \cdot 1.3 \cdot 10^{-5} \text{ mSv/Bq} \cdot 0.1 = 0.7 \text{ mSv}$;

For infants: $E = 1000 \text{ Bq/kg} \cdot 200 \text{ kg} \cdot 2.1 \cdot 10^{-5} \text{ mSv/Bq} \cdot 0.1 = 0.4 \text{ mSv}$

TABLE 2
ASSESSMENT OF A DOSE FOR INFANTS AND ADULTS FROM INGESTION OF IMPORTED FOODS IN A YEAR

Radionuclide	Guideline Level ($Bq.kg^{-1}$)	Annual dose, mSv		
		1st year after major contamination		Long-term Exposure Ranges
		Infants	Adults	
^{238}Pu*	1	0.08	0.01	0.00001-0.0008
^{239}Pu*		0.08	0.01	0.00001-0.0008
^{240}Pu*		0.08	0.01	0.00001-0.0008
^{241}Am*		0.07	0.01	0.00001-0.0007
^{90}Sr	100	0.5	0.2	0.0002-0.005
^{106}Ru		0.2	0.04	0.00004-0.002
^{129}I		0.4	0.6	0.0004-0.006
^{131}I		0.4	0.1	0.0001-0.004
^{235}U		0.7	0.3	0.0003-0.007
^{35}S	1000	0.2	0.04	0.00004-0.002
^{60}Co		1	0.2	0.0002-0.01
^{89}Sr		0.7	0.1	0.0001-0.007
^{103}Ru		0.1	0.04	0.00004-0.001
^{134}Cs		0.5	1	0.0005-0.01
^{137}Cs		0.4	0.7	0.0004-0.007
^{144}Ce		1	0.3	0.0003-0.01
^{192}Ir		0.3	0.08	0.00008-0.003
^{3}H**	10.000	0.02	0.02	0.00002-0.0002
^{14}C		0.3	0.3	0.0003-0.003
^{99}Tc		-***	0.4	0.0004-0.004

* For actinides, the additional safety margin of an order of magnitude has been introduced taking into account the assessment uncertainty.

** This represents the most conservative value for tritium (organically bound).

*** Whereas ^{99}Tc is basically found in the marine environment and contained in seafood, its contribution to ingestion by infants is not considered.

Long-term exposure assessment:

Beyond one year after a major environmental contamination with radionuclides, most of foods imported from areas with radioactive residues will be replaced with the ones imported from unaffected areas. In these conditions, foods contaminated with radionuclides may be still imported occasionally. Therefore, the mean worldwide value of the import/production factor ranging from 0.0001 to 0.001 (see Annex 1) is used for the mean dose estimation:

Cs-137:

For adults: $\boldsymbol{E}$ = 1000 Bq/kg ·550 kg ·$1.3 \cdot 10^{-5}$ mSv/Bq ·(0.0001-0.001) = 0.0007 - 0.007 mSv;

For infants: $\boldsymbol{E}$ = 1000 Bq/kg ·200 kg ·$2.1 \cdot 10^{-5}$ mSv/Bq ·(0.0001-0.001) = 0.0004 - 0.004 mSv.

PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM

(AT STEP 5 OF THE PROCEDURE)

Code No.	Food	ML (mg/kg)	Step	Remarks
CM 0649	Rice, Polished	0.4	5	
GC 0654	Wheat Grain	0.2	5	
VR 0589	Potato	0.1	5	Peeled
VR 0075 VS 0078	Stem and Root Vegetables	0.1	5	Excluding Celeriac and Potato
VL 0053	Leafy Vegetables	0.2	5	
VA 0035 VB 0040 VC 0045 VO 0050	Other Vegetables	0.05	5	Excluding, Fungi and Tomatoes

PROPOSED DRAFT MAXIMUM LEVEL FOR CADMIUM

(AT STEP 3 OF THE PROCEDURE)

Code No.	Food	ML (mg/kg)	Step	Remarks
IM 0150	Molluscs	1.0	3	Including Cephalopods

PROPOSED DRAFT MAXIMUM LEVELS FOR TIN

(AT STEP 4 OF THE PROCEDURE)

Code No.	Food	ML (mg/kg)	Step	Remarks
	Canned Beverages	200 mg/kg	4	
	Canned Foods other than Beverages	250 mg/kg	4	

PROPOSED DRAFT MAXIMUM LEVEL FOR TOTAL AFLATOXINS IN UNPROCESSED AND PROCESSED ALMONDS, HAZELNUTS AND PISTACHIOS

(AT STEP 3 OF THE PROCEDURE)

Code No.	Food	ML (µg/kg)	Step	Remarks
	Unprocessed and Processed Almonds, Hazelnuts and Pistachios	15 µg/kg	3	

ACTION REQUIRED AS THE RESULT OF CHANGES IN THE ACCEPTABLE DAILY INTAKE (ADI) STATUS AND OTHER TOXICOLOGICAL RECOMMENDATIONS ARISING FROM THE 61ST JECFA MEETING

INS Number	Substance	36th CCFAC Recommendation
160b	Annatto extract (solvent-extracted bixin)	Await further action by JECFA
160b	Annatto extract (solvent-extracted norbixin)	Await further action by JECFA
160b	Annatto extract (oil-processed bixin suspensions)	Await further action by JECFA
160b	Annatto extract (aqueous-processed bixin)	Await further action by JECFA
160b	Annatto extract (alkali-processed nobixin)	Await further action by JECFA
160b	Annatto extract (alkali-processed nobixin, not acid-precipitated)	Await further action by JECFA
100i	Curcumin	Proceed to consider provisions in Tables 1 and 2 of the GSFA
472e	Diacetyltartaric and fatty acid esters of glycerol (DATEM)	Proceed to consider provisions in Tables 1 and 2 of the GSFA
	Alpha-Amylase from *Bacillus licheniformis* containing a genetically engineered alpha-amylase gene from *B. licheniformis*	Used as a processing aid, no need to consider inclusion in the GSFA
	Laccase from *Myceliophthorathermophila* expressed in *Aspergillus oryzae*	Used as a processing aid, no need to consider inclusion in the GSFA
	Mixed xylanase, beta-glucanase enzyme preparation, produced by a strain of *Humicola insolens*	Used as a processing aid, no need to consider inclusion in the GSFA
	Xylanase from *Thermomyces lanuginosus* expressed in *Fusarium venenatum*	Used as a processing aid, no need to consider inclusion in the GSFA
961	Neotame	Request data on proposed uses for inclusion in GSFA Tables 1 and 2 at Step 3
1203	Polyvinyl alcohol (PVA)	Request data on proposed uses for inclusion in GSFA Tables 1 and 2 at Step 3
999	Quillaia extract (Type 1)	Recommend no action
	Quillaia extract (Type 2)	Recommend no action as Type 2 is excluded from the GSFA at least until JECFA assigns a full ADI
963	D-Tagatose	Recommend no action with regard to provisions in the GSFA

PRIORITY LIST OF FOOD ADDITIVES, CONTAMINANTS AND NATURALLY OCCURRING TOXICANTS PROPOSED FOR EVALUATION BY JECFA

	Question(s) to be answered	Data availability	Proposed by
A. Food additives			
Flavours: 130 flavouring agents from seven chemical classes; 280 supplemental flavours from other classes previously evaluated by JECFA; five natural flavouring complexes[1]	Risk assessment at current use patterns; establishment of specifications	End 2004	USA
Aluminium from all sources	Toxicity and intake of aluminium from its use in food additives and from other sources	Unknown	CCFAC (GSFA)
Annatto extracts[1]	Re-evaluation of safety; revision of specifications	Unknown	JECFA
Arpink red (new evaluation)[1]	Risk assessment for the intended use as a food colour; specifications	End 2004	Czech Republic
Aspartame acesulfame salt[1]	Revision of specifications	2004 (available)	NL
Beeswax[1]	To consider the acceptability of use as carriers for flavours in category 14.4 (Data on use level and intake will be porvided)	2004	Japan, IOFI
Candelilla wax[1]		2004	IOFI
Laccase from *Myceliophora thermophila* expressed in *Aspergillus orizae*[1]	Revision of specifications	2004	Denmark
Phospholipase from Fusarium venenatum expressed in Aspergillus orizae[1]	Risk assessment of the use in food; specifications	June 2004	Denmark
Pullulan, Pullulan PI-20[1]	Risk assessment for use as a film-forming agent; establishment of specifications	2004 (available)	CH
Quillaia extracts[1]	Type 1: Exposure assessment of use levels at 500 mg/l in semi-frozen beverages; Type 2: safety assessment and revision of specifications	2004	JECFA
Stearyl tartrate	Evaluation of uses other than flour treatment agent	Unknown	Unknown
Sucralose[1]	Revision of specifications	2004 (Available)	Canada
Sucrose esters of fatty acids[1]	Revision of specifications	2004	Japan

	Question(s) to be answered	Data availability	Proposed by
B. Contaminants and naturally occurring toxicants			
Cadmium[1]	Exposure assessment based on: (a) the list of commodities as agreed at the 36th Session of CCFAC with the proposed MLs plus one higher and one lower level; and, (b) GEMS/Food regional diets and national consumption databases	Japan, US, Canada (Partially available)	CCFAC
Chloropropanols[1]	Formation of 3-MCPD and 1,3-DCP	September 2004	UK
Ergot alkaloids	Full evaluation	2004 (available)	Canada
Ochratoxin A[1]	Toxicological evaluation, exposure assessment (special consideration to developing countries), impact of different maximum levels for cereals (e.g. 5 or 20 µg/kg), effects of processing on residual levels in foods	End 2004	UK/EC
Patulin	Exposure assessment (questions to be developed at future sessions based on available data)	2007 (Japan, Norway)	CCFAC
Phenyl hydrazines (including agaritine)	Full evaluation	2004 (available)	Denmark

[1] High priority for evaluation by JECFA in 2005/2006