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 03/12A
April 2003

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Twenty-sixth Session

Rome, Italy, 30 June – 5 July 2003

REPORT OF THE 35th SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

Arusha, Tanzania
17-21 March 2003

Note: This report includes Codex Circular Letter CL 2003/13-FAC

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

CX 4/30.2 **CL 2003/13-FAC**
April 2003

TO: - Codex Contact Points

- Interested International Organizations

FROM: Secretary, Joint FAO/WHO Food Standards Programme, FAO,

Viale delle Terme di Caracalla, 00100 Rome, Italy

SUBJECT: **DISTRIBUTION OF THE REPORT OF THE THIRTY-FIFTH SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS (ALINORM 03/12A)**

The report of the thirty-fifth Session of the Codex Committee on Food Additives and Contaminants will be considered by the 26th Session of the Codex Alimentarius Commission (Rome, Italy, 30 June - 5 July 2003).

PART A: MATTERS FOR ADOPTION BY THE 26TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION

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

1. **Draft Revisions to the Annex to Table 3 of the Codex General Standard for Food Additives at Step 8** (para. 56 and Appendix III).
2. **Draft Revised Codex General Standard for Irradiated Foods at Step 8** (para. 78 and Appendix V).
3. **Draft Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients in Other Beverages at Step 8** (para. 123 and Appendix IX).
4. **Draft Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals, Including Annexes on Ochratoxin A, Zearalenone, Fumonisins and Tricothecenes at Step 8** (para. 127 and Appendix X).
5. **Draft (Step 8) and Proposed Draft (Step 5/8) Revisions to the International Numbering System (INS) for Food Additives** (paras. 96, 99 and Appendix VII).
6. **Specifications for the Identity and Purity of Food Additives (Categories I and II) arising from the 59th JECFA Meeting at Step 5/8** (para. 94 and Appendix VI).

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 Procedural Manual,* Twelfth Edition, pages 19-21) to the Secretary, Codex Alimentarius Commission, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy (telefax: +39.06.5705.4593; e-mail: codex@fao.org (***preferably***)) **no later than 15 May 2003.**

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

7. **Proposed Draft Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants** (para. 28 and Appendix IV).

8. **Proposed Draft Revised Food Category System of the Codex General Standard for Food Additives** (para. 51 and Appendix II).

9. **Proposed Draft Principles for Exposure Assessment of Contaminants and Toxins in Foods** (para. 119 and Appendix VIII).

10. **Proposed Draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts** (para. 136 and Appendix XI).

11. **Proposed Draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods** (para. 152 and Appendix XII).

12. **Proposed Draft Maximum Levels for Cadmiun** (para. 165 and Appendix XIV).

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 Procedural Manual*, Twelfth Edition, pages 19-21) to the Secretary, Codex Alimentarius Commission, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy (telefax: +39.06.5705.4593; e-mail: codex@fao.org (***preferably***)) **no later than 15 May 2003.**

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 2003** 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, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy (Telefax: +39.06.5705.4593; E-mail: Codex@fao.org (***preferably***)).

13. **Draft Maximum Level for Lead in Fish** (paras. 140-142 and Appendix XIII of ALINORM 03/12)

The Committee decided to return the draft maximum level of 0.2 mg/kg of lead in fish to Step 6 for comments and further consideration at its 36th Session.

14. **Draft (Step 6) and Proposed Draft (Step 3) Revisions to the Codex General Standard for Food Additives (CL 2002/44-FAC)** (para. 53)

The Committee noted that in the absence of the data required to implement revisions to Table 1 of the General Standard, additional comments on document CL 2002/44-FAC would be requested for further consideration at its 36th Session.

15. **Proposed Draft Maximum Levels for Tin** (para. 160 and Appendix XIII)

The Committee decided to return proposed draft maximum levels for tin (250 mg/kg in canned foods other than beverages and 200 mg/kg in canned beverages) to Step 3 for circulation, comments and further consideration at its 36th Session.

16. **Proposed Draft Maximum Levels for Cadmium** (para. 165 and Appendix XIV)

The Committee decided to return proposed draft maximum levels for cadmium in rice, polished (0.2 mg/kg); soy bean, dry (0.2 mg/kg); molluscs (including cephalopods) (1.0 mg/kg); and peanuts (0.2 mg/kg) to Step 3 for circulation, comments and further consideration at its 36th Session.

17. **Proposed Draft Code of Practice for the Safe Use of Active Chlorine** (paras. 67-68)

The Committee agreed to request information on the need for the use of active chlorine and the food categories involved with a view to developing a proposed draft Code of practice for the Safe Use of Active Chlorine.

18. Proposed Draft Maximum Levels for Aflatoxin Contamination Tree Nuts (almonds, hazelnuts and peanuts) (paras. 129-131)

The Committee agreed to solicit proposals for maximum levels for aflatoxin in almonds, hazelnuts and peanuts for consideration at its 36th Session with a view to the establishment of maximum levels for this contaminant.

The Committee also agreed to request additional information on aflatoxin contamination in tree nuts other than almonds, hazelnuts and pistachios for inclusion in the Discussion Paper on Aflatoxins in Tree Nuts, for consideration at its 36th Session.

19. Proposed Draft Maximum Levels for Deoxynivalenol (para. 182)

The Committee agreed to solicit proposals for maximum levels for Deoxynivalenol as well as information on the different species involved for consideration at its 36th Session.

20. Information on Food Additives Considered by the 59th JECFA Meeting in the Context of the Codex General Standard for Food Additives (paras. 15-16 and 36-37)

The Committee agreed with the recommendations and requests for information on additives considered by the 59th JECFA in the context of the Codex General Standard for Food Additives.

21. Maximum Levels for Patulin in Apple Juice and Apple Juice Ingredients in Other Beverages (para. 125)

The Committee agreed to request more data on maximum levels of patulin in apple juice and apple juice ingredients in other beverages for consideration at its 36th Session.

22. Priority List of Food Additives, Contaminants and Naturally Occurring Toxicants Proposed for Evaluation by JECFA (paras. 184 – 191 and Appendix XV).

The Committee agreed to request additional comments for additions or amendments to its Priority List for consideration at its 36th Session.

23. Information and Data on the Occurrence on Mycotoxin Contamination in Sorghum (para. 196)

The Committee agreed to solicit information and data on mycotoxin contamination in sorghum for consideration at its 36th Session.

SUMMARY AND CONCLUSIONS

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

MATTERS FOR ADOPTION/CONSIDERATION BY THE 26TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION:

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

- Forwarded revisions to the Annex to Table 3 of the General Standard for Food Additives to the Commission for final adoption at Step 8 (para. 56);
- Forwarded the draft Revised Codex General Standard for Irradiated Foods to the Commission for final adoption at Step 8 (para 78 and Appendix V);
- Forwarded the draft Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients in Other Beverages to the Commission for final adoption at Step 8 (para. 123 and Appendix IX);
- Forwarded the draft Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals, including Annexes on Ochratoxin A, Zearalenone, Fumonisin and Tricothecenes to the Commission for final adoption at Step 8 (para. 127 and Appendix X);
- Forwarded proposed draft and draft amendments to the International Numbering System (INS) to the Commission for final adoption at Steps 5/8 and 8 respectively (paras. 96, 99 and Appendix VII);
- Forwarded Specifications for the Identity and Purity of Food Additives (Categories I and II) arising from the 59th Meeting of JECFA to the Commission for final adoption at Step 5/8 (with the omission of Steps 6 and 7) as Codex Advisory Specifications (para. 94 and Appendix VI);

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

- Forwarded the proposed draft Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants for preliminary adoption at Step 5 (para. 28 and Appendix IV);
- Forwarded the proposed draft revised Food Category System of the Codex General Standard for Food Additives to the Commission for preliminary adoption at Step 5 (para. 51 and Appendix II);
- Forwarded the proposed draft Principles for Exposure Assessment of Contaminants and Toxins in Foods to the Commission for preliminary adoption at Step 5 (para. 119 and Appendix VIII);
- Forwarded the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts to the Commission for preliminary adoption at Step 5 (para. 136 and Appendix XI);
- Forwarded the proposed draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods to the Commission for preliminary adoption at Step 5 (para. 152 and Appendix XII);
- Forwarded proposed draft maximum levels for Cadmium in various commodities to the Commission for preliminary adoption at Step 5 (para. 165 and Appendix XIV);

Proposals for New Work

- Agreed to revise the Preamble to the Codex General Standard for Food Additives as new work to be undertaken by the Committee (paras. 47-48);
- Agreed to develop a proposed draft Code of Practice for the Safe Use of Active Chlorine as new work to be undertaken by the Committee (paras. 67-68);
- Agreed to revise the Guideline Levels for Radionuclides in Foods following Accidental Nuclear Contamination for Use in International Trade (CAC/GL 5-1989), including Guidelines Levels for Long-Term Use as new work to be undertaken by the Committee (para. 84);
- Agreed to the establishment of proposed draft Maximum Levels for aflatoxins in almonds, hazelnuts and pistachios as new work to be undertaken by the Committee (para. 129);

- Agreed to elaborate a proposed draft Code of practice for the Prevention and Reduction of Tin Contamination in Foods as new work to be undertaken by the Committee (para. 162);
- Agreed to establish proposed draft Maximum Levels for Deoxynivalenol as new work to be undertaken by the Committee (para. 182);

Other Matters for Consideration by the Codex Alimentarius Commission

- Requested the Commission to maintain the level of 0.02 mg/kg for lead in milk while revising the footnote to read "a concentration factor applies to partially or wholly dehydrated milk" (para. 148);
- Recommended the revocation of the maximum level of 0.1 mg/kg for lead in milk fat (para. 148).

MATTERS OF INTEREST TO THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES

Food Additives

- Decided to request information on a number of additives considered by the 59th Meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) 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 (paras. 15-16 and 36-37);
- Endorsed food additives provisions arising from the Codex Committee on Fish and Fishery Products, Milk and Milk Products and Processed Fruits and Vegetables (para. 30);
- Expressed support for the generic table approach taken by the Codex Committee on Milk and Milk Products in addition to the specific listing of food additives and their respective use levels in the standards while reaffirming that, for the proper assessment of specific maximum levels, information on the specific listing of food additives and their respective use levels was still required from Codex commodity committees in the endorsement process and in the context of the GSFA (paras. 32-33);
- Decided to re-install the Quality Control Working Group under the Chairmanship of the United States of America (subject to confirmation) to work through electronic means well before the next session of the Committee (paras. 38-39);
- Decided to reconvene the *Ad Hoc* Working Group on the Codex General Standard for Food Additives under the Chairmanship of the United States of America (subject to confirmation) prior to its next Session (paras. 40-41);
- Decided to request additional comments on document CL 2002/44-FAC for further consideration at its next Session in view of the absence of the data required to implement revisions to Table 1 of the GSFA (para. 53);
- Requested a Drafting Group under the direction of Switzerland to further elaborate a Discussion Paper on Processing Aids and Carriers in the context of the GSFA for consideration at its next meeting (para. 60);
- Decided to reconvene the *Ad Hoc* Working Group on Specifications prior to its next Session under the Chairmanship of the United States (subject to confirmation with the USA and the Codex/Dutch Secretariats) (para. 89);
- Agreed that the Codex Secretariat would prepare a Discussion Paper on the Harmonization of Terms Used by Codex and JECFA for Functional Sub-Classes and Technological Functions for consideration at the next CCFAC (para. 101);

Contaminants

- Decided to reconvene the *Ad Hoc* Working Group on Contaminants and Toxins under the Chairmanship of Denmark prior to its next Session (para. 105);
- Agreed that the Delegation of the Netherlands, in collaboration with the Codex Secretariat, would revise and update Schedule 1 of the GSCTF for circulation, comments and further consideration at its next Session (para. 110);

Mycotoxins in Foods and Feeds

- Agreed to request more data on the draft Maximum Level of 50 μg/kg for Patulin in Apple Juice and Apple Juice Ingredients in Other Beverages for consideration at its next Session (para. 125);
- Requested Iran to revise the Discussion Paper on Aflatoxins in Tree Nuts, including information submitted on aflatoxin contamination in tree nuts other than almonds, hazelnuts and pistachios as well as methods of analysis for their determination (para. 131);
- Requested China to revise the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts for circulation, comments and further consideration at its next Session (para. 133);
- Agreed to solicit information and data on mycotoxin contamination in sorghum for consideration at its next Session (para. 196);

Industrial and Environmental Contaminants in Foods

- Decided to return the draft maximum level for lead (0.2 mg/kg) in fish to Step 6 for comments and further consideration at its 36th Session (paras. 140-142 and Appendix XIII of ALINORM 03/12);
- Decided to return the proposed draft maximum levels for tin (250 mg/kg in canned foods other than beverages and 200 mg/kg in canned beverages) to Step 3 for comments and further consideration at its next session (para. 160);
- Decided to discontinue the consideration of the Discussion Paper on Tin in view of its decision to elaborate maximum levels for tin and to develop a Code of Practice for the Prevention and Reduction of Tin Contamination in Foods (paras. 154, 160 and 162);
- Decided to return proposed draft maximum levels for cadmium in various commodities to Step 3 for circulation, comments and further consideration at its 36th Session (paras. 165 and Appendix XIV);
- Decided to discontinue the consideration of methods of analysis for the determination of dioxins and dioxin-like PCBs with the understanding that the methods would be returned to the CCFAC for further consideration (para. 167);
- Requested the Netherlands to revise the Position Paper on Dioxins and Dioxin Like PCBs including background levels of dioxins and dioxin like PCBs in foods and feeds with a view to identifying sources of contamination by these compounds, for circulation, comments and further consideration at its next Session (para. 169);
- Agreed that a Drafting Group led by Germany would further elaborate on the proposed draft Code of Practice for Source Directed Measures to Reduce Dioxins and Dioxin-Like PCBs Contamination of Foods for circulation, comments and further consideration at its next Session (para. 172);
- Agreed that the United Kingdom would revise the Position Paper on Chloropropanols for circulation, comments and further consideration at its next Session (para. 179);
- Agreed that a Drafting Group led by the United Kingdom would prepare a Discussion Paper on Acrylamide for circulation, comments and consideration at its next Session (para. 194);

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

- Agreed to continue the consideration of amendments to the Priority List of Food Additives and Contaminants requiring evaluation by JECFA at its next Session (paras. 184 – 191 and Appendix XV);

TABLE OF CONTENTS

Paragraphs

Paragraphs

LIST OF APPENDICES

INTRODUCTION

1. The 35th Session of the Codex Committee on Food Additives and Contaminants was held in Arusha, United Republic of Tanzania, from 17-21 March 2003, at the kind invitation of the Government of The Netherlands in cooperation with the Government of Tanzania. Mr. Edwin Hecker, Netherlands Ministry of Agriculture, Nature Management and Fisheries, chaired the meeting. The meeting was attended by 170 participants representing 42 Member Countries and 19 International Organizations. The List of Participants is attached at Appendix I.

OPENING OF THE SESSION

2. Opening remarks were provided by Mrs. Abdallah, Tanzanian Minister of Health, Mr. Rodgers, Representative of FAO, Dr. Mwambazi, Representative of WHO and Mrs. Bergkamp, Director General of the Netherlands Ministry of Agriculture, Nature Management and Fisheries.

3. The speakers noted that the globalization of international trade in foods highlighted the needs of African countries to strengthen their food safety and food control activities in order to meet both local food production and export and import requirements.

4. With regard to capacity building, they welcomed the establishment of the FAO/WHO trust fund for enhanced participation in Codex launched on 14th February 2003, and encouraged the convening of Codex committee sessions in developing nations in order to stimulate enhanced participation by these countries in Codex activities.

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

5. The Committee adopted the Provisional Agenda as proposed. The Committee agreed to discuss agenda item 5 immediately after agenda item 7 and also agreed to consider potential future work related to acrylamide under agenda item 18 (Other Business and Future Work).

6. The Committee agreed to hold the informal ad hoc Working Groups on the International Numbering System (INS) (agenda item 12) and on Priorities (agenda item 17) under the chairmanship of Ms. Harriet Wallin (Finland) and Mr. Joop Dornseiffen (the Netherlands), respectively.

APPOINTMENT OF RAPPORTEUR (Agenda Item 2)

7. The Committee agreed with the suggestion of the Chairman to appoint Dr. Wendy Matthews (United Kingdom) and Mr. John van den Beuken (New Zealand) as Rapporteurs for the Session.

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

8. The Committee noted matters arising from the 50th Session (June 2002) of the Executive Committee of the Codex Alimentarius Commission as well as other Codex committees. These matters included preparation of the Medium Term Plan 2003-2007; consideration of proposed draft standards and related texts at Step 5; consideration of new work proposals at Step 1 of the Procedure; proposals for the discontinuation of work; and matters coming from the Codex Committee on Methods of Analysis and Sampling, Codex Committee on Milk and Milk Products, Codex Committee on Fish and Fishery Products and the Joint FAO/WHO Regional Coordinating Committee for Asia.

9. The Committee acknowledged that some of the issues contained in the document were presented mainly for information while others would be further considered when discussing the relevant agenda items. The Committee also noted that the Executive Committee had approved the discontinuation of work on maximum levels for lead in bivalve molluscs and crustaceans as well as for cadmium in crustaceans, liver and kidney.

---

1 CX/FAC 03/1 and CX/FAC 03/1-Add.1.

2 CX/FAC 03/2.

SUMMARY REPORT OF THE FIFTY-NINTH MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (JECFA) (Agenda item 4a)[3]

10. The FAO Joint Secretariat to JECFA informed the Committee that WHO was currently in the process of selecting a successor for Dr John Herrman, the previous WHO Joint Secretary; a nomination was expected in the forthcoming months. Dr Luetzow apologized for the absence of the Acting WHO Joint Secretary Dr Sam Page who was unable to attend to this session due to another important assignment related to Codex work.

11. At the 59th meeting (Geneva, 4-13 June 2002) the Expert Committee deferred annatto extracts, ethyl carbamate, sodium dicholoroisocyanurate and curcumin to subsequent meetings. Gum arabic was removed from the agenda as well because no new information had been forwarded to the Committee. Nitrite was added to the agenda of the meeting because the conversion of nitrate to nitrite means they have to be considered together.

12. The Expert Committee evaluated five food additives, one of them being a new one, and 196 flavouring agents. ADIs for alitame, nitrate and mineral oils of low and medium viscosity (Class I) were maintained, nitrite was assigned a slightly increased ADI of 0-0.07 mg/kg bw. JECFA decided to include cross-linked sodium carboxymethyl cellulose in the group ADI "not specified" with the other modified celluloses. The Committee reviewed specifications for one enzyme and finalized the evaluations and specifications for a list of flavouring agents which were pending from previous meetings. The FAO Joint Secretary expressed the appreciation of the Expert Committee on the high quality of the data on flavours which had been submitted.

13. Several general issues related to the work of the Expert Committee were discussed. JECFA provided the Joint Secretariat with comments on several guidelines which applied to their work on food additives and contaminants. These will be posted in due course on the Committee's webpages at FAO (www.fao.org/es/esn/jecfa) and WHO (www.who.int/pcs/jecfa.htm). The Expert Committee discussed issues related to the fact that some flavours were also used as food additives and decided to refer in such cases to the evaluation and the specifications elaborated at previous meetings.

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

14. The Committee noted action required by the CCFAC as a result of changes to existing acceptable daily intakes (ADIs) and/or the establishment of new ADIs for food additives, or other toxicological recommendations for contaminants, as recommended by the 59th JECFA meeting.

15. The Committee agreed with the following recommendations and requests for information on those additives considered by the 59th JECFA in the context of the GSFA:

- In view of the maintained ADIs for alitame, mineral oils of low and medium viscosity (Class II and III) and nitrate, the corresponding entries in Table 1 of the draft GSFA should be considered.
- The additive cross-linked sodium carboxymethyl cellulose (INS 468) should be included in Table 3 and information on the use of the additive in the food categories listed in the Annex to Table 3 should be requested.

16. Several delegations raised questions about the recommendation from JECFA to consider a possible revision of GSFA entries for alitame, nitrate and nitrite. Since the full report of the Expert Committee's 59th meeting, which includes detailed intake assessments for these three additives, was not available to the CCFAC, it was agreed to defer the consideration of this recommendation to a future meeting. With respect to the exposure assessment of nitrite and nitrate, the UK delegation informed the Committee that results from a study on the bioavailability of both substances would be available near the end of 2003.

---

3 Summary Report of the 59th Meeting of the Joint FAO/WHO Expert Committee on Food Additives (unnumbered).

4 CX/FAC 03/3.

COMMENTS SUBMITTED ON THE PROPOSED DRAFT RISK ASSSESSMENT POLICY STATEMENT FOR THE APPLICATION OF RISK ANALYSIS PRINCIPLES TO THE STANDARD SETTING ACTIVITIES OF THE CCFAC IN CONJUNCTION WITH THE RISK ASSESSMENTS PERFORMED BY JECFA (Agenda Item 5)[5]

17. The 34th Session of the CCFAC agreed to circulate the proposed draft Risk Assessment Policy Statement for comments and further consideration at its current meeting.[6] The Committee noted that this subject was being considered as a result of the latest discussions at the 24th Session (July 2001) of the Codex Alimentarius Commission, in that the Commission recommended that relevant Codex committees should continue to develop and document the application of risk analysis in their work.[7]

18. The 50th Session (June 2002) of the Executive Committee noted that the text would be developed in the Codex step procedure, and would ultimately be incorporated into the Codex Alimentarius Commission Procedural Manual, to be read in conjunction with the general principles for risk analysis in Codex currently under development. The Executive Committee recommended that the CCFAC give consideration to the simplification of the title and to some rewording of the text in order to make its application more general, since scientific advice might be required from other bodies than JECFA, especially concerning radionuclides.[8]

19. The Committee discussed the proposed draft Risk Assessment Policy Statement for the Application of Risk Analysis Principles to the Standard Setting Activities of the CCFAC in Conjunction with Risk Assessments Performed by the JECFA (Appendix XXI of ALINORM 03/12) as follows:

Title

20. As requested by the Executive Committee and in the interest of making the risk analysis principles as broad as possible, the Committee changed the Title to read as *"Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants"*. It was agreed that the remaining descriptive text of the original title should be repeated in a new Scope section of the document, and that the request of the Executive Committee to reword the text so that scientific advice could be considered from bodies other than JECFA could be included.

21. However, it was stressed that such advice should only be provided by internationally recognized bodies in the absence of JECFA recommendations. The Committee therefore agreed to add a new Scope section at the beginning of the document to read that *"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."*

CCFAC

22. As the latter part of section l) primarily applied to the identification of methods related to contaminants, the Committee agreed to the suggestion of JECFA and deleted point 3) of section l) which indicated that *"the level of the additive in food can be determined through appropriate methods"*.

23. As suggested by JECFA, the Committee also strengthened the principles the CCFAC considers when preparing priority lists for JECFA by adding a new section r) to indicate that *"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"*.

24. The Committee also agreed that a definition for "safety assessment" would be required in a future revision to the text.

---

5 CX/FAC 03/4 (not issued) and comments submitted in response to CL 2002/10-FAC by the Joint FAO/WHO Expert Committee on Food Additives (CRD 4).

6 ALINORM 03/12, para. 30 and Appendix XXI.

7 ALINORM 01/41, para. 85.

8 ALINORM 03/3A, para. 89.

JECFA

25. The Committee agreed to the suggestion of JECFA and reworded section x) to read that *"JECFA will provide the CCFAC with information on the applicability and any constraints of the risk assessment to the general population and to particular sub-populations and will as far as possible identify risks to populations of potentially enhanced vulnerability (e.g., children, women of child-bearing age, the elderly).*

26. The Committee agreed to delete the last part of section aa) reading *"as part of the risk assessments provided to CCFAC"* as it was unnecessary and potentially confusing.

27. The Committee also agreed to delete sections ff) and gg) in their entirety as information on the endpoints of the evaluation were adequately addressed in JECFA reports, including the description of the scientific basis and the appropriate safety factor.

Status of the Proposed Draft Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants (CCFAC)

28. The Committee forwarded the proposed draft Risk Analysis Principles Applied by the Codex Committee on Food Additives and Contaminants (CCFAC) to the Commission for preliminary adoption at Step 5 (see Appendix IV).

29. In taking this decision, the Committee reaffirmed that the text would eventually be included in the Codex Alimentarius Commission Procedural Manual as advice to Codex Committees. The Committee also emphasized that future revisions to the text should not conflict with the draft *"Working Principles for Risk Analysis for Application in the Framework of the Codex Alimentarius"* under elaboration by the Codex Committee on General Principles.

ENDORSEMENT AND/OR REVISION OF MAXIMUM LEVELS FOR FOOD ADDITIVES IN CODEX STANDARDS (Agenda Item 6)[9]

30. In accordance with the section concerning Relations between Commodity Committees and General Committees in the Codex Alimentarius Commission Procedural Manual, the CCFAC endorsed the food additive provisions in the draft Codex Standard for Canned Stoned Fruits (at Step 8) and the draft Codex Standard for Aqueous Coconut Products (at Step 8) as proposed by the Codex Committee on Processed Fruits and Vegetables; the Draft Codex Standard for Salted Herring and Salted Sprats (at Step 6) as proposed by the Codex Committee on Fish and Fishery Products; and, the draft Revised Standard for Whey Powders (at Step 8) as proposed by the Codex Committee on Milk and Milk Products. In discussing the food additive provisions of the draft Revised Codex Standard for Creams and Prepared Creams (at Step 8) and the draft Revised Codex Standard for Fermented Milks (at Step 8), the CCFAC noted that the Codex Committee on Milk and Milk Products had decided to include a generic table based on food additive functional classes and food product categories in addition to the specific food additive listings in both Standards.

31. In this regard, it was noted that the specific food additive listings in the draft Revised Codex Standard for Cream and Prepared Creams had been previously endorsed[10] by the 33rd Session of the CCFAC and therefore, no further action was required. In regard to the draft revised Codex Standard for Fermented Milks, it was noted that the CCFAC had not endorsed the specific food additive listings in the Standard and therefore, the Codex Committee on Milk and Milk Products[11] decided to remove these specific food additive listings from the Standard for the time being.

32. The Committee expressed general support for the generic table approach taken in the draft Revised Codex Standard for Fermented Milks and the Draft Revised Codex Standard for Creams and Prepared Creams in addition to the specific listing of food additives and their respective use levels in the Standards.

---

9 CX/FAC 03/5.
10 ALINORM 01/12A, para. 42.
11 ALINORM 03/11, para. 54.

33. However, for the proper assessment of specific maximum levels, it was reaffirmed that information on the specific listing of food additives and their respective use levels was still required from Codex Commodity Committees in the endorsement process and in the context of the General Standard for Food Additives and that a co-ordination process was necessary.

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)[12]

34. The 34th Session of the CCFAC decided to reconvene the *ad hoc* Working Group on the Codex General Standard for Food Additives prior to the 35th Session under the chairmanship of the United States.[13] In the absence of the delegation of the United States, the Working Group temporarily appointed Dr. S. Brooke-Taylor (Australia) as Chairman and Mrs. B. Fabech (Denmark) as rapporteur.

35. The chairman of the Working Group briefly summarized its discussions and proposed several general recommendations to the Committee, as follows:

Changes in ADI Status resulting from the 59th Meeting of the Joint FAO/WHO Expert Committee on Food Additives

36. The Committee agreed that in view of the revised ADIs for nitrate and nitrite, the corresponding maximum levels in the GSFA need to be reconsidered, as the estimated intakes of these compounds from the diet as a whole might need to be reviewed. The Committee also noted that the ADI for alitame had been maintained and therefore, suggested its inclusion in the GSFA.

37. In view of the JECFA recommendation to establish temporary ADIs for Mineral Oils (Class II and III), the Committee decided to maintain the draft proposals in the GSFA at their current Steps pending a final determination by JECFA.

Quality Control Group

38. The Committee recalled its earlier decision to install a quality control working group working electronically between sessions to compile data submitted by governments in making revisions to the GSFA. However, the Committee felt that the responsibilities of the Quality Control Group should be expanded to the examination of technical justification provided as well as making recommendations for maximum levels of use in the GSFA through the CCFAC. It was also noted that the Quality Control Group should attempt to resolve differences between the GSFA and commodity standards.

39. In view of this discussion, the Committee decided to re-install the Quality Control Working Group under the direction of the United States (subject to confirmation), and with the assistance of Australia, Morocco, South Africa, Tanzania, Thailand and the European Commission, to work through electronic means well before the next Session of the Committee.

Status of the Ad Hoc Working Group on the Codex General Standard for Food Additives

40. 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, subject to confirmation with the United States and the Codex/Dutch Secretariats.

41. In taking this decision, and in view of the heavy future workload of the Working Group, the Committee agreed that more time should be allotted for its discussions at the 36th CCFAC and that the Agenda of the Working Group should be circulated well before the CCFAC Session.

---

12 CRD 1.

13 CX/FAC 03/12, para. 41.

PROPOSED DRAFT REVISED PREAMBLE TO THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7b)[14]

42. The 34th Session of the CCFAC agreed that a drafting group under the direction of France and the United States would elaborate a proposed draft revision to the Preamble of the Codex General Standard for Food Additives (GSFA) for circulation, comments and consideration at its current meeting.[15] The Committee focussed its discussions on document CX/FAC 03/6 as well as the Working Group recommendations concerning this agenda item.

43. The Committee reconfirmed that the Preamble to the GSFA required detailed revision and in this regard, stated that the term "widely used" should be properly defined as it could be subject to misinterpretation. It was also stressed that maximum levels of use should be based on technological need and that safe intake should be interpreted within the context of the whole diet and not only by individual foods.

44. The Committee re-confirmed that while it was generally accepted that additives assigned a numerical ADI by JECFA should be assigned numerical maximum levels of use in the GSFA, exceptions were allowed where the CCFAC agreed to a specific exemption on a case-by-case basis.

45. It was stressed by some delegations that notwithstanding the fact that many countries listed food additives and corresponding levels of use in their legislation, it was necessary to establish whether or not the additives were actually being used in foods that were traded internationally. It was also suggested by these delegations that the lowest level of use reported should be the basis for inclusion in the GSFA, and that it was the responsibility of governments wishing to establish a higher level to justify such use.

46. Other delegations did not agree with this suggestion and noted that in any case, the establishment of maximum levels of use should be based on data and information provided by all regions of the world including developing countries and that this information would be used in the development of the Standard. In this regard, these delegations noted the importance of establishing levels to cover all potential uses of the additive.

47. In view of the difficulties in reaching concrete proposals on revisions to the Preamble to the GSFA, The Committee decided to install a Working Group under the direction of Switzerland, and with the assistance of Australia, Denmark, New Zealand, EC, FAO and the IFU, with the following terms of reference:

- To review the Preamble to the GSFA in order to comply with the General Principles for the Use of Food Additives (Section 5.1, Volume 1A of the Codex Alimentarius) and the Codex Alimentarius Commission Procedural Manual, including Relations Between Commodity Committees and General Committees (pages 84-85), and the consideration of maximum levels of use for food additives proposed by commodity committees;
- To develop an accompanying document for the GSFA to describe the technical procedures used by CCFAC in the development of the GSFA, plus definitions and terminology and a step-by-step approach in the use of the GSFA, and;
- To review the policy for selecting maximum levels of use for inclusion in the GSFA as a matter of the highest priority.

48. The Committee agreed that this revision should take account of document CX/FAC 03/6, specifically as related to paragraph 100, as well as the above discussions and written comments submitted at the current meeting. The Committee agreed that the document should be circulated for additional comment and further consideration at its next meeting.

---

14 CX/FAC 03/6 and comments submitted by the USA, EC, IFAC, IFU, ISDC (CX/FAC 03/6-Add. 1) and Japan, ELC (CRD 5).

15 ALINORM 03/12, para. 51.

PROPOSED DRAFT REVISED FOOD CATEGORY SYSTEM OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 7c)[16]

49. The 34th Session of the CCFAC agreed that a drafting group under the direction of the United States would review the written comments submitted as well as the Committee's discussions with a view towards elaborating an amended version of the Food Category System of the GSFA for circulation, comment and further consideration at its current meeting.[17] The Committee focussed its discussions on document CX/FAC 03/7 as well as the Working Group recommendations concerning this agenda item.

50. The Committee agreed to revisions to the Food Category System as proposed by the Working Group with minor revisions. It was noted that delegations of the Asian region, including China, Korea, Japan and Thailand, would develop proposals on the finalization of categories 4.3 (soybean products, non-fermented), 6.8 (soybean products), 12.10 (fermented soybean products) and 12.11 (soy protein products) for consideration at the 36th CCFAC.

Status of the Proposed Draft Revised Food Category System of the Codex General Standard for Food Additives

51. The Committee forwarded the proposed draft Revised Food Category System of the Codex General Standard for Food Additives (see Appendix II) to the Commission for preliminary adoption at Step 5.

COMMENTS SUBMITTED ON THE PROPOSED DRAFT AND DRAFT REVISIONS TO TABLE 1 OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES IN RESPONSE TO CL 2002/10-FAC AND CL 2002/44-FAC (Agenda Item 7d)[18]

52. The 34th Session of the CCFAC agreed to hold food additive provisions with specific numeric levels at steps 3 and 6 and to request additional information, including technological need and justification for their use.[19] The Committee also agreed that a revised Table 1 of the Codex General Standard for Food Additives, with all food additive provisions, including final provisions as well as those that were in the step process, should be circulated for the information of the Committee well in advance of its current meeting.[20]

53. The Committee noted that in the absence of the data required to implement revisions to Table 1 of the Standard, it was decided to request additional comments on document CL 2002/44-FAC by circular letter to this report for further consideration at its 36th Session. It was further decided that the written comments submitted at the current meeting would also be taken into account.

COMMENTS SUBMITTED ON THE DRAFT REVISIONS TO THE ANNEX TO TABLE 3 OF THE CODEX GENERAL STANDARD FOR FOOD ADDITIVES SUBMITTED IN RESPONSE TO CL 2002/10-FAC (Agenda Item 7e)[21]

54. The 34th Session of the CCFAC agreed to revisions to the Annex to Table 3 and decided to request additional comment for further consideration at its current meeting.[22] The Committee focussed its discussions on document CX/FAC 03/9 as well as the Working Group recommendations concerning this agenda item.

55. The Committee agreed to revisions to the Food Category System as proposed by the Working Group with minor revisions.

---

16 CX/FAC 03/7 and comments submitted by Israel, Japan, New Zealand, Poland, United Kingdom, AAC, AMFEP, IBFAN, IDF, IFAC, IFMA, IFU, ISDC (CX/FAC 03/7-Add. 1) and Japan, Malaysia, ISA, OIV (CRD 6).

17 ALINORM 03/12, para. 54.

18 Comments submitted in response to CL 2002/10-FAC and CL 2002/44-FAC by Canada, Israel, Poland, United Kingdom, United States AMFEP, CEFIC, EC, IBFAN, IFAC, IFU, ISA, ISDC, ISDI, MARINALG, OFCA (CX/FAC 03/8) and Brazil, Japan, Italy, OIV (CRD 7).

19 ALINORM 03/12, para. 60 and Appendix III.

20 ALINORM 03/12, para. 39.

21 Comments submitted by IFU, ISDA, OFCA (CX/FAC 03/9).

22 ALINORM 03/12, para. 64 and Appendix IV.

Status of Draft Revisions to Food Categories or Individual Food Items Excluded from the General Conditions of Table 3 (Annex to Table 3 of the General Standard for Food Additives)

56. The Committee forwarded the draft Revision to the Annex to Table 3 of the Codex General Standard for Food Additives to the Commission for final adoption at Step 8 (see Appendix III).

COMMENTS SUBMITTED ON THE DISCUSSION PAPER ON PROCESSING AIDS AND CARRIERS (CX/FAC 02/9) IN RESPONSE TO CL 2002/10-FAC (Agenda Item 8)[23,]

57. The 34th Session of the CCFAC decided to request comments on the Discussion Paper on the Consideration of Processing Aids and Carriers in the Context of the General Standard for Food Additives (CX/FAC 02/9) for further consideration at its current meeting.[24]

58. The delegation of New Zealand briefly introduced the paper previously considered by the Committee as well as the comments submitted. It was suggested that the Committee should reaffirm its previous decision to include processing aids in the Codex General Standard for Food Additives and to request a drafting group to elaborate realistic approaches and recommendations for consideration at the next meeting.

59. In view of the difficulty in incorporating processing aids into the Codex General Standard for Food Additives and the potential related delays in finalizing the text, the Committee decided not to consider the inclusion of processing aids into the GSFA for the time being.

60. The Committee therefore decided that a drafting group under the direction of Switzerland, and with the assistance of the Netherlands, New Zealand, IDF, IFU and FAO, would elaborate a discussion paper on realistic approaches and recommendations on the consideration of processing aids and carriers for circulation, comment and further consideration at its next meeting.

DISCUSSION PAPER ON THE USE OF ACTIVE CHLORINE (Agenda Item 9)[25]

61. The 34th Session of the CCFAC agreed[26] that a drafting group led by Denmark would revise the Discussion Paper on the Use of Active Chlorine for circulation, comments and further consideration at its current meeting. The Delegation of Denmark introduced document CX/FAC 03/11 and referred to the written comments submitted.

62. The Committee noted that active chlorine was widely used as a "disinfectant" in food traded internationally due to its anti-microbial effects in food processing and therefore, any potential health risks associated with the use of chlorine would have to be carefully considered in relation to the benefits of its use. It was noted that in any case, the use of active chlorine should not replace good hygienic practices.

63. The Committee acknowledged the inclusion of provisions for the use of active chlorine in texts developed by the Codex Committees on Food Hygiene and on Fish and Fishery Products. In this regard, it was noted that the CCFAC should not prevent other Codex committees from incorporating provisions for the use of this chemical until a thorough risk assessment on the use of chlorine compounds and/or its reaction by-products was performed by JECFA. Moreover, the CCFAC would coordinate this issue with the other Codex committees concerned.

64. A number of delegations pointed out that restrictions on the use of chlorine compounds in water treatment and food processing might compromise both public health and market access as some of the products involved (e.g. fresh fruits and vegetables, fish and fishery products, etc.) were important export items for developing countries. It was noted that the use of active chlorine had been proven to be an economical and effective practice to reduce microbial contamination. In addition, it was indicated that recent concerns unrelated to safety had been identified at levels used in water treatment and food industry.

---

23 Comments submitted in response to CL 2002/10-FAC from Canada, USA and the EC (CX/FAC 03/10).
24 ALINORM 03/12, para. 68.
25 CX/FAC 03/11 and comments submitted by Canada, ISDC (CX/FAC 03/11-Add.1) Japan and USA (CRD 8).
26 ALINORM 03/12, para. 73.

65. The Representative of WHO informed the Committee that the *WHO Guidelines for Drinking Water Quality* were being revised by the WHO and that safety concerns regarding active chlorine components and reaction by-products in food processing applications might be taken up by this group of experts at the same time. The Representative of the JECFA Secretariat noted that the data contained in the Discussion Paper was not sufficient to determine what type of risk assessment should be undertaken by JECFA at this time.

66. The Delegation of Denmark pointed out that the paper did not address the use of active chlorine in drinking water but only in the treatment of foodstuffs, particularly in regard to its by-product reactions for which a comprehensive safety risk assessment had not yet been performed. It was noted that such a risk assessment could allow the Committee to elaborate maximum residue limits in Codex standards and related texts either as food additives or processing aids.

Status of the Discussion Paper on the Use of Active Chlorine

67. As a result of the above discussion, the Committee decided to discontinue the consideration of the Discussion Paper and to commence work on the development of a Code of Practice for the safe use of active chlorine, subject to approval as new work by the Codex Alimentarius Commission.

68. The Committee agreed that Denmark, with the assistance of Greece, Ireland, Korea, Morocco, Philippines, Thailand, European Commission and WHO, would prepare a proposed draft Code of Practice for the Use of Active Chlorine for circulation, comment and further consideration at its next meeting. It was noted that information on the need for the use of active chlorine and the food categories involved should be provided by circular letter to this report for consideration by the drafting group.

69. In addition, the Committee agreed to the suggestion of WHO to consider and evaluate the risk and health benefits of the use of active chlorine in food processing, and taking into account both microbiological and chemical safety aspects, when reviewing the WHO Guidelines on Drinking Water Quality.

DRAFT REVISED CODEX GENERAL STANDARD FOR IRRADIATED FOODS (Agenda Item 10a)[27]

70. The 34th Session of the CCFAC requested a drafting group led by the Philippines to revise the Codex General Standard for Irradiated Foods based on the written comments submitted and the Committee's discussions for circulation, additional comment and further consideration at its current meeting.[28] The Committee noted the differing views expressed at the 34th Session of the CCFAC as well as the results of the Joint FAO/IAEA/WHO Study Group on High Dose Irradiation.

71. The Committee focused its discussions on document CX/FAC 03/12 and the summary provided by the delegation of the Philippines as follows:

Section 2.2 – Absorbed Dose

72. The Committee noted that the current Standard states that "the overall average dose absorbed by a food subjected to radiation processing should not exceed 10 kGy". As a compromise solution, and in order to include text related to consumer safety and to define a more practically applied maximum absorbed dose, the Committee agreed to amend Section 2.2 – Absorbed Dose, as follows:

"For the irradiation of any food, the minimum absorbed dose should be sufficient to achieve the technological purpose and the maximum absorbed dose should be less than that which would compromise consumer safety, wholesomeness, or would adversely affect structural integrity, functional properties, or sensory attributes. The maximum absorbed dose delivered to a food should not exceed 10 kGy, except when necessary to achieve a legitimate technological purpose."

---

27 CX/FAC 03/12 and comments submitted by Canada, New Zealand, USA, ICGFI (CX/FAC 03/12-Add. 1), IAEA, USA (CRD 9).

28 ALINORM 03/12, para. 81.

Section 2.3 – Facilities and Control of the Process

73. The Committee changed the word "Premises" to "Facilities" at the beginning of the sentence in Section 2.3.5 in order to reflect that both facilities and records should be open to inspection by the appropriate authorities.

Section 4.1 – General Requirement

74. The Committee agreed to strengthen this section in order to specify that the irradiation of food was justified for the protection of consumer health as well as for the fulfillment of a technological need, as follows:

"The irradiation of food is justified only when it fulfils a technological requirement and/or is beneficial for the protection of consumer health. It should not be used as a substitute for good hygienic and good manufacturing practices or good agricultural practices."

Section 5 – Re-Irradiation

75. As a result of its decision under Section 2.2 above, and in recognition of the application of irradiation to certain products above a maximum absorbed dose of 10 kGy while taking consumer safety into account, the Committee agreed to revise Section 5.3 as follows:

"The cumulative maximum absorbed dose delivered to a food should not exceed 10 kGy as a result of re-irradiation, except when it is necessary to achieve a legitimate technological purpose, and should not compromise consumer safety or wholesomeness of the food."

Section 6.1 – Inventory Control

76. The Committee added the term "irradiation dose" as additional information to be included on shipping documents.

Section 6.3 – Foods in Bulk Containers

Section 6.4 – Post Irradiation Verification

77. The Committee agreed to modify these Sections as proposed in document CX/FAC 03/12 and in accordance with similar provisions in the Codex General Standard for the Labeling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991, Section 5.2). It was noted that the entire Section 6 was subject to endorsement by the Codex Committee on Food Labeling.

Status of the Draft Revised Codex General Standard for Irradiated Foods

78. The Committee forwarded the draft Revised Codex General Standard for Irradiated Foods to the Commission for final adoption at Step 8 (see Appendix V). The delegations of Germany and Austria reserved their positions on this decision, in particular with regard to the provisions concerning the absorbed dose in Sections 2.2 and 5.3.

CONSIDERATION OF A REVISION OR AMENDMENTS TO THE 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 10b)[29]

79. The 50th Session of the Executive Committee (June 2002) considered a request arising from the International Atomic Energy Agency (IAEA) to broaden the Guideline Levels for Radionuclides in Foods Following Accidental Nuclear Contamination for Use in International Trade (CAC/GL 5-1989) to other radionuclides and to consider the establishment of guideline levels for radionuclides for long-term use as new work.[30]

80. The Executive Committee did not approve the elaboration of guideline levels but referred the issue to the CCFAC for consideration along with further input for the IAEA in regard to the scope of the work.[31]

81. The representative of the IAEA presented a brief summary of the proposal submitted by the IAEA Division of Radiation and Waste Safety, including the section on Issues for Consideration by the Committee. The IAEA representative noted that the 44th General Conference of the International Atomic Energy Agency passed a resolution (GC(44)/RES/15) which requested the Agency's Secretariat to develop "radiological criteria for long-lived radionuclides in commodities, particularly foodstuffs …..", in collaboration with the competent organs of the United Nations.

82. The IAEA representative suggested that the current Codex guideline levels might not be applicable to longer term situations. The current set of radionuclides was limited and therefore, the list might be broadened to include other radionuclides, including those of natural origin. It was noted that new scientific information and data was available.

83. The Committee agreed in principle with the proposals contained in document CX/FAC 03/13 in that the CCFAC should consider the application of guideline levels for radionuclides in foods for long term situations and that the current list of isotopes in the Codex Guidelines might need to be broadened. It was noted, however, that this consideration should also include the examination of considerably lower levels (at least 1/100th) and that additions to the current list of isotopes in the Codex guidelines should be carefully examined.

84. The Committee agreed to request the 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 (CAC/GL 5-1989) for circulation, comment and further consideration at its next Session. This decision was taken with the understanding that the revised Guidelines would be prepared on the basis of document CX/FAC 03/13 and the above discussion, and that the proposal was subject as approval as new work by the Codex Alimentarius Commission.

REPORT OF THE AD-HOC WORKING GROUP ON SPECIFICATIONS (Agenda Item 11a)[32]

85. The 34th Session of the CCFAC decided[33] to reconvene the ad hoc Working Group on Specifications prior to its current session under the Chairmanship of the USA. Due to the absence of this delegation, the ad hoc Working Group agreed to the suggestion of the Chairman and nominated Mrs I. Meyland (Denmark) as Chairperson and Mrs. H. Wallin (Finland) acted as Rapporteur and as Category Monitor. The recommendations of the report of the ad hoc Working Group (CRD 2) were considered by the Committee under Agenda Item 11(b).

86. The Committee was informed by the FAO Joint Secretariat that the revision and publication of a new edition of the Compendium for Food Additive Specifications (FNP 52 plus addenda) was on hold due to a lack of funds. FAO contemplated the creation of a trust fund which would allow it to take this important work forward.

---

29 CX/FAC 03/13.
30 CX/EXEC 02/50/7, Annex 1.
31 ALINORM 03/3A, para. 67 and Appendix III.
32 CRD 2.
33 ALINORM 03/12, para. 92.

87. The Committee noted that the improved quality of data submitted to JECFA had led to a smaller number of tentative specifications than usual. In this regard, the FAO Joint Secretariat explicitly thanked those observer organizations that supported the ongoing evaluation process of flavouring agents.

88. The Committee noted that JECFA had discussed how to approach flavours which have also a use as a technological additive. In the future, JECFA will not adopt separate specifications for such flavouring agents but refer to the additive specifications already published. The Joint Secretariat recommended a careful approach when implementing the list of flavours since some molecules e.g. butylparaben have been cleared by the Expert Committee for use as flavours at very low levels although the use as a food additive at higher levels was not found to be acceptable. Members are invited to provide comments to the FAO Joint Secretariat when they encounter problems with respect to these issues. The Committee was informed that the evaluation of two flavours (glycerol, propylene glycol) could not be finalized by JECFA because it remained unclear whether both substances actually function as flavouring agents.

89. The Committee decided to reconvene the *ad hoc* Working Group on Specifications prior to its next Session under the Chairmanship of the United States, subject to confirmation with the United States and the Codex/Dutch Secretariats.

SPECIFICATIONS FOR THE IDENTITY AND PURITY OF FOOD ADDITIVES ARISING FROM THE 59th MEETING OF THE JECFA (Agenda Item 11b)[34]

90. The Committee considered specifications arising from the 59th Meeting of the Joint FAO/WHO Expert Committee on Food Additives (FAO Food and Nutrition Paper 52 – Add. 10), the report of the ad hoc Working Group on Specifications (CRD 2) and the written comments submitted when considering this agenda item.

91. The Committee forwarded 80 food additive specifications and 262 flavouring agent specifications in Category I to the Commission for adoption at Step 5/8 as Codex Advisory Specifications. Of the 80 food additive specifications, 76 specifications for colours (38) and acidity regulators (38) were forwarded for adoption of revised or new limits for arsenic and lead and the deletion of all limits for heavy metals (as lead).

92. The Committee agreed to forward one food additive specification in Category II to the Commission for adoption as a Codex Advisory Specification after editorial changes.

93. In the case of additives for which only new limits for arsenic and lead were adopted, the Committee agreed to the suggestion of the Codex Secretariat that in the List of Codex Advisory Specifications for Food Additives (Section 5.6, Codex Alimentarius Volume 1A), the year of original Commission adoption of the full specification as well as a footnote indicating the revision of specific metal limits would be indicated.

Status of the Specifications for the Identity and Purity of Food Additives Arising from the 59th JECFA Meeting

94. The Committee forwarded Specifications for the Identity and Purity of Food Additives Arising from the 59th JECFA Meeting in Categories I and II to the Commission for adoption as Codex Advisory Specifications at Step 5/8 (see Appendix VI).

---

[34] Comments submitted in response to CX/FAC 03/14 from OFCA (CRD 10). Comment summary paper CX/FAC 03/14-Add. 1 was not issued.

COMMENTS SUBMITTED ON REVISIONS TO THE INTERNATIONAL NUMBERING SYSTEM (INS) IN RESPONSE TO CL 2002/29-FAC (Agenda Item 12a)[35]

95. The Committee noted that the 34th CCFAC forwarded[36] various amendments to the INS numbers for Mineral Oil to the Executive Committee for preliminary adoption at Step 5. The 50th Session of the Executive Committee adopted the proposed draft amendments to the INS numbers for Mineral Oil at Step 5.[37]

96. The Committee agreed with the recommendations of the *Ad Hoc* Informal Working Group on the International Numbering System as follows:

- Forwarded draft amendments to INS 905d, 905e, 905f and 905g (Mineral Oils) to the Codex Alimentarius Commission for final adoption at Step 8;
- Assigned INS 962 for D-Tagatose and INS 457 for alpha-Cyclodextrin; and changed the INS 468 from Croscarmellose to Cross-linked Sodium Carboxymethyl Cellulose. The Committee agreed to forward these proposed draft amendments to the Codex Alimentarius Commission for final adoption at Step 5/8, and;
- Noted that invertase from *Saccharomyces cerevisiae* was included under INS 1103 (Invertases) and beta-Carotene from *Blakeslea trispora* was included under INS 160a(ii) (Beta-carotene, Natural Extracts).

97. The Committee noted the comments of the Observer of OFCA as to INS 466 Sodium Carboxymethyl Cellulose in that it should be assigned a dual name Cellulose Gum. The Committee noted corresponding synonyms for INS 468 (Cross-linked Sodium Carboxymethyl Cellulose / Cross-linked Cellulose Gum) and INS 469 (Sodium Carboxymethyl Cellulose, enzematically hydrolyzed / Cellulose Gum, enzematically hydrolyzed). It was noted that this request was proposed in order to achieve the harmonization of terms for labelling purposes and that use of the name "Cellulose Gum" was being considered by the EC Council of Ministers as a part of the latest proposed amendment of EC Directive 95/2 as well as being incorporated in the US Food Chemicals Codex.

98. The Committee noted that the nature of the INS was open and non-binding for member countries, and thus a dual name in the INS did not place any obligation on countries to accept dual names nationally. However, the Committee could not reach an agreement on the inclusion of the name "Cellulose Gum" to INS 466 and the consequential amendments to INS 468-469. The Committee therefore agreed to discuss this issue further at its next meeting.

Status of Amendments to the International Numbering System for Food Additives

99. The Committee forwarded draft and proposed draft amendments to the International Numbering System for Food Additives to the Codex Alimentarius Commission for final adoption at Steps 8 and 5/8, respectively (see Appendix VII).

---

35 Comments submitted in response to CL 2002/29-FAC from Israel, USA, EC, OFCA (CX/FAC 03/15) and OFCA (CRD 11).

36 ALINORM 03/12, para. 97 and Appendix VII.

37 ALINORM 03/3A, Appendix II.

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 (Agenda Item 12b)[38]

100. The 34th Session of the CCFAC requested the Codex Secretariat to prepare a Discussion Paper on the Harmonization of Terms used by Codex and JECFA for Sub-classes and Technological Functions for consideration at its current meeting.[39] The Committee noted that due to time constraints the Codex Secretariat had not distributed document CX/FAC 03/16 and therefore, comment summary paper CX/FAC 03/16-Add.1 was not issued.

101. The Committee noted the importance of ensuring consistency between the CCFAC and JECFA in regard to food additive functional classes, definitions, sub-classes (technological functions) and corresponding INS numbers. Therefore, the Committee agreed that the Codex Secretariat would prepare the Discussion Paper for circulation, comment and further consideration at its next Session.

ENDORSEMENT AND/OR REVISION OF MAXIMUM LEVELS FOR CONTAMINANTS IN CODEX STANDARDS (Agenda Item 13)[40]

102. In accordance with the section concerning Relations Between Commodity Committees and General Committees in the Codex Alimentarius Commission Procedural Manual, all provisions in respect of contaminants contained in Codex commodity standards should be referred to the Codex Committee on Food Additives and Contaminants for endorsement. The Committee noted that no maximum levels for contaminants had been submitted for endorsement since its 34th Session and therefore, no action was required.

CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOODS (GSCT) (Agenda Item 14)

REPORT OF THE AD HOC WORKING GROUP ON CONTAMINANTS AND TOXINS (Agenda Item 14a) [41]

103. The 34th Session of the CCFAC decided to reconvene the ad hoc Working Group on Contaminants and Toxins prior to its current meeting under the Chairmanship of Denmark.[42] The working group temporarily appointed Mr. Frans Verstraete (EC) as Chairman of the Working Group, and Mr. Paul Brent and Mr. Rob Theelen acted as rapporteurs. The Committee also noted with regret the absence of the previous Chairman of the Working Group, Dr. Torsten Berg.

104. The Chairman of the Working Group briefly summarized its discussions and recommendations based on the plenary Agenda of the CCFAC.

Future Status of the Ad Hoc Working Group on Contaminants and Toxins

105. The Committee decided to reconvene the ad hoc Working Group on Contaminants and Toxins prior to its 36th Session under the Chairmanship of Denmark.

---

38 CX/FAC 03/16 and CX/FAC 03/16-Add.1 (not issued).
39 ALINORM 03/12, para. 97.
40 CX/FAC 03/17.
41 CRD 3.
42 ALINORM 03/12, para. 102.

SCHEDULE 1 OF THE PROPOSED DRAFT CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOODS (Agenda item 14b) [43]

106. The 34th Session of the CCFAC requested the delegation of the Netherlands to present an updated version of Schedule 1 of the Codex General Standard for Contaminants and Toxins in Foods for consideration at its current meeting.[44]

107. The Committee noted that the revised version of Schedule 1 contained a listing of all maximum levels for contaminants in Codex standards adopted by the Codex Alimentarius Commission, general limits for contaminants adopted by the Codex Alimentarius Commission, and proposed draft and draft maximum levels for contaminants currently under consideration by the Committee.

108. The Committee agreed that all previously adopted maximum levels for contaminants should be prepared for re-publication in the next revision of the Codex Alimentarius as an integral part of the Codex General Standard for Contaminants and Toxins in Foods. In taking this decision, the Committee confirmed that the commodity listings in Schedule 1, including listings for foods and feeds, should include the appropriate references to commodity codes on the basis of the Codex Classification for Foods and Animal Feeds developed by the Codex Committee on Pesticide Residues. It was noted that the Food Categorization System of the General Standard (Annex V and V-A) needed further development in this regard, especially as related to specific food groups and processed products.

109. The Committee also agreed that Schedule 1 should be carefully reviewed to eliminate substances that were normally considered and classified as quality, as opposed to safety, parameters in foods. This included substances such as copper and iron, which were currently included in Codex standards for fats and oils as quality factors. It was noted that other substances such as zinc and other food product categories would also need to be examined.

110. The Committee agreed that the delegation of the Netherlands, in collaboration with the Codex Secretariat, would revise and update Schedule 1 of the Codex General Standard for Contaminants and Toxins in Foods for circulation, comment and further consideration at the 36th Session of the CCFAC. In taking this decision, the Committee noted that this revision would require a close examination of current Codex standards as well as a close liaison with existing Codex commodity committees in this regard.

PROPOSED DRAFT PRINCIPLES FOR EXPOSURE ASSESSMENT OF CONTAMINANTS AND TOXINS IN FOODS (Agenda Item 14c) [45]

111. The 34th Session of the CCFAC decided that the proposed draft Principles for Exposure Assessment of Contaminants and Toxins in Foods should be revised by a drafting group led by Australia and France for circulation, additional comment and further consideration at its current meeting.[46]

112. The Committee noted that this subject was being considered as a result of the latest discussions at the 24th Session of the Codex Alimentarius Commission, in that the Commission recommended that relevant Codex Committees should continue to develop and document the application of risk analysis in their work.[47]

113. The Committee also noted that the Codex Alimentarius Commission decision that "specific guidance on the application of risk analysis principles should be provided to Codex Committees on one hand and to Member Governments on the other: the former guidance to be included in the Procedural Manual, the latter in the Codex Alimentarius itself".[48]

114. The Committee focused its discussions on the CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups presented in document CX/FAC 03/19, as follows:

---

43 CX/FAC 03/18.
44 ALINORM 03/12, para. 104.
45 CX/FAC 03/19 and comments submitted by Australia, Denmark, Japan, Thailand, United Kingdom (CX/FAC 02/19-Add. 1), Canada, EC (CRD 12).
46 ALINORM 03/12, para. 109.
47 ALINORM 01/41, para. 85.
48 ALINORM 01/41, para. 74.

Section 1 – Estimation of the Total Dietary Exposure to a Contaminant or Toxin from Foods/Food Groups

115. The Committee agreed to reinsert a paragraph (see Appendix VIII para. 5) indicating that these Principles are not applicable to genotoxic carcinogens and substances with acute health risks.

Section 2 – Identification of Foods/Food Groups that Contribute Significantly to Total Dietary Exposure of the Contaminant or Toxin

116. The Committee noted that the criteria for selecting foods or food groups that contribute significantly to the diet and the percentage figure of tolerable intake (10% and 5%) were approximations only and therefore, the Committee modified the first two indents of paragraph 11 to read "approximately 10%" and "approximately 5%", respectively. The percentage figures were also footnoted with the phrase that the figure was to be "rounded to the nearest $1/10^{th}$ of a percent".

Section 3 – Generation of Distribution Curves for Concentrations of the Contaminant in Specific Foods/Food Groups

117. In view of the fact that the As Low as Reasonably Achievable (ALARA) approach did not always need to be taken into account when considering risk management options, the Committee revised the second sentence of paragraph 12 to read that "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".

Annex I: Role of JECFA, CCFAC and Member States in the Development of Safety Standard

118. The Committee deleted the reference to the "drafting group" in the "member states" column of the flow chart.

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

119. The Committee forwarded the proposed draft CCFAC Policy for Exposure Assessment of Contaminants and Toxins in Foods or Food Groups to the Commission for preliminary adoption at Step 5 (see Appendix VIII). In taking this decision, the Committee agreed that the text would eventually be included in the Codex Alimentarius Commission Procedural Manual as advice to Codex Committees and as an Annex to the GSCTF. The Committee noted that after preliminary adoption, the document would be circulated for comment and further consideration at its 36^{th} Session.

MYCOTOXINS IN FOOD AND FEED (Agenda item 15)

COMMENTS SUBMITTED ON THE DRAFT CODE OF PRACTICE FOR THE REDUCTION OF PATULIN CONTAMINATION IN APPLE JUICE AND APPLE JUICE INGREDIENTS IN OTHER BEVERAGES IN RESPONSE TO CL 2002/29-FAC (Agenda item 15a) [49]

120. The 34th Session of the CCFAC forwarded the proposed draft Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients in Other Beverages to the Executive Committee for preliminary adoption at Step 5.[50] The 50th Session of the Executive Committee adopted the proposed draft Code of Practice at Step 5.[51]

---

49 Comments submitted by the EC (CX/FAC 03/20) in response to CL 2002/29-FAC.

50 ALINORM 03/12, para. 122 and Appendix XI.

51 ALINORM 03/3A, Appendix II.

121. The Committee focused its discussion on Appendix XII of ALINORM 03/12. The Committee noted that the 50th Session of the Executive Committee had suggested[52] an amendment to the title of the code of practice for tree nuts to include both terms "prevention" and "reduction" and therefore, the Committee implemented this decision to the Title in all codes of practice under its consideration.

122. Although it was noted that fermented products normally did not contain patulin, the Committee agreed to add a new second sentence paragraph 2 to state: "However, patulin has been observed in apple cider where apple juice was added after fermentation". In regard to post harvest fungicide treatments, the Committee stipulated that their application was in accordance with "authorized conditions of use" as opposed to "manufacturers recommendations" in paragraph 33.

Status of the Draft Code of Practice for the Reduction of Patulin Contamination in Apple Juice and Apple Juice ingredients in Other Beverages

123. The Committee forward the draft Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients in Other Beverages to the 26th Session of the Commission for final adoption at Step 8 (see Appendix IX).

COMMENTS SUBMITTED ON THE DRAFT MAXIMUM LEVEL FOR PATULIN IN APPLE JUICE AND APPLE JUICE INGREDIENTS IN OTHER BEVERAGES IN RESPONSE TO CL 2002/10-FAC (Agenda Item 15b)[53]

124. The 34th CCFAC forwarded the draft maximum level of 50 µg/kg for patulin in apple juice and apple juice ingredients in other beverages to the Commission for adoption at Step 8.[54] The CCFAC also agreed to request more data on the level of patulin in apple juice and apple juice ingredients in other beverages so that the CCFAC would reconsider the possible future reduction of the level once the Code of Practice had been implemented.[55] The Committee therefore noted that the draft maximum level was not a subject for discussion at the current meeting.

125. In view of its previous discussions, the Committee agreed to request more data on the level of patulin in apple juice and apple juice ingredients in other beverages for consideration at the next Session.

COMMENTS SUBMITTED ON THE DRAFT CODE OF PRACTICE FOR THE PREVENTION (REDUCTION) OF MYCOTOXIN CONTAMINATION IN CEREALS, INCLUDING ANNEXES ON OCHRATOXIN A, ZEARALENONE, FUMONISINS AND TRICOTHECENES IN RESPONSE TO CL 2002/29-FAC (Agenda item 15c)[56]

126. The 34th CCFAC agreed to forward the proposed draft Code of Practice for the Prevention (Reduction) of Mycotoxin Contamination in Cereals, including Annexes on Ochratoxin A, Zearalenone, Fumonisin and Tricothecenes, to the Executive Committee for preliminary adoption at Step 5.[57] The 50th Session of the Executive Committee adopted the proposed draft Code of Practice at Step 5.[58]

Status of the Proposed Draft Code of Practice for the Prevention (Reduction) of Mycotoxin Contamination in Cereals, including Annexes on Ochratoxin A, Zearalenone, Fumonisin and Tricothecenes

127. The Committee forwarded the draft Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals, including Annexes on Ochratoxin A, Zearalenone, Fumonisin and Tricothecenes, to the 26th Session of the Commission for final adoption at Step 8 (see Appendix X).

---

52 CX/FAC 03/3A, para. 66.
53 Comments submitted by Denmark and Canada (CX/FAC 03/21) and European Community and Korea (CRD 13).
54 ALINORM 03/12, para. 118 and Appendix X
55 ALINORM 03/12, para. 119.
56 Comments submitted by the EC (CX/FAC 03/22) and Japan (CRD 14) in response to CL 2002/29-FAC.
57 ALINORM 03/12, para. 125 and Appendix XII.
58 ALINORM 03/3A, Appendix II.

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 IN RESPONSE TO CL 2002/10-FAC (Agenda Item 15d)[59]

128. The 34th Session of the CCFAC decided that a drafting group led by Iran would revise the Discussion Paper on Aflatoxins in Tree Nuts for circulation, comment and further consideration at its current meeting. The 34th CCFAC also agreed that information on aflatoxin contamination in tree nuts as well as methods of analysis of the determination of aflatoxins in tree nuts would be requested.[60] Due to time constraints, comments were not requested on the Discussion Paper.

129. On the basis of the data presented in the document, the Committee agreed to the elaboration of maximum levels for aflatoxins in almonds, hazelnuts and pistachios. The Committee noted that the maximum levels would be developed on the basis of the ALARA principle and with the understanding that related sampling plans needed to be established. It was also noted that this proposal was subject to approval as new work by the Codex Alimentarius Commission.

130. The remaining data for other varieties of tree nuts was considered insufficient for the elaboration of maximum levels at the current time.

131. The Committee agreed that the delegation of Iran would revise the Discussion Paper for circulation, comments and further consideration at its next meeting, and that additional information would be requested on aflatoxin contamination in tree nuts other than almonds, hazelnuts and pistachios.

PROPOSED DRAFT CODE OF PRACTICE FOR THE REDUCTION OF AFLATOXIN CONTAMINATION IN TREE NUTS (Agenda Item 15e)[61]

132. The 34th Session of the CCFAC agreed that a drafting group led by China would elaborate a proposed draft Code of Practice for the Reduction of Aflatoxin Contamination in Tree Nuts for circulation, comments and further consideration at its next meeting, and with the understanding that the proposal would be subject to approval as new work by the Executive Committee[62]. The 50th Session of the Executive Committee approved the proposal as new work[63].

Status of the Proposed Draft Code of Practice for The Reduction of Aflatoxin Contamination in Tree Nuts

133. The Committee agreed to request China to revise the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts on the basis of discussions in the working group and written comments submitted, for circulation, comment and further consideration at its next Session.

DISCUSSION PAPER ON THE DEVELOPMENT OF A CODE OF PRACTICE FOR THE REDUCTION OF AFLATOXIN CONTAMINATION IN PEANUTS (Agenda Item 15f)[64]

134. The 34th CCFAC agreed that a drafting group led by South Africa would prepare a Discussion Paper on the Development of a Code of Practice for the Reduction of Aflatoxin Contamination in Peanuts for circulation, comment and further consideration at its next Session[65]. The Committee focussed its discussion on document CX/FAC 03/25, which also included a proposed draft Code of Practice for the Reduction of Aflatoxin Contamination in Peanuts.

---

59 CX/FAC 03/23 and CX/FAC 03/23-Add. 1 (not issued).
60 ALINORM 03/12, para. 127.
61 CX/FAC 03/24 and comments submitted by Thailand (CX/FAC 03/24-Add.1) and the EC (CRD 15).
62 ALINORM 03/12, para. 128.
63 ALINORM 03/3A, Appendix III.
64 CX/FAC 03/25 and comments submitted by Poland (CX/FAC 25-Add.1) and the EC (CRD 16).
65 ALINORM 03/12, para. 176.

135. In order to broaden the requirement concerning water used for irrigation and other purposes, the Committee agreed to amend paragraph 22 to read "Water used for irrigation and other purposes (e.g., preparation of pesticide sprays) should be of suitable quality for the intended use". The Committee also agreed to insert the Title "Harvest" immediately before paragraph 27 and combined paragraphs 32 and 33.

Status of the Discussion Paper on the Development of a Code of Practice for the Reduction of Aflatoxin Contamination in Peanuts

136. The Committee forwarded the proposed draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts to the 26th Session of the Commission for preliminary adoption at Step 5 (see Appendix XI).

INDUSTRIAL AND ENVIRONMENTAL CONTAMINANTS IN FOODS (Agenda Item 16)

COMMENTS SUBMITTED ON THE DRAFT MAXIMUM LEVEL FOR LEAD IN FISH IN RESPONSE TO CL 2002/10-FAC (Agenda Item 16a) [66]

137. The 34th Session of the CCFAC decided that the draft maximum level of 0.2 mg/kg for lead in fish, as well as the list of certain species for which the level might not apply, should be returned to Step 6 for comments and further consideration at its current Session.[67] The Committee focussed its discussions on the consideration of the Working Group report and the written comments submitted.

138. The Committee noted the suggestion of a two-tiered approach, namely, the establishment of a limited list of internationally traded fish species that could comply with a level of 0.2 mg/kg and, the establishment of a limited list of internationally traded fish species that could comply with a level 0.4 mg/kg. In any case, the Committee noted that it should focus its efforts on those species that were significantly traded internationally and that specific scientific species names were required.

139. Several delegations expressed concern about this approach, as short positive lists with the corresponding levels could actually create barriers to trade for those species excluded from the lists. These delegations expressed preference for one level that was practically achievable and based on the data submitted, i.e., 0.5 mg/kg. These delegations also explained that the available analytical equipment in their countries could measure a level of 0.5 mg/kg, as opposed to the technical and economic difficulties in measuring lower levels.

Status of the Draft Maximum Level for Lead in Fish

140. The Committee could not reach a consensus on this issue and therefore, decided to return the draft maximum level (Appendix XIII of ALINORM 03/12) to Step 6 for comments and further consideration at its 36th Session.

141. The Committee agreed that in the interim, a statistical analysis should be performed based on the comments submitted and additional data available (GEMS Food, FAO) 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.

142. The delegation of Denmark stressed the need for more data and information about fish species traded internationally. In this regard, it was noted that data should be forwarded in GEMS Food format[68]. The Committee accepted the offer of the delegation of Denmark to collect the data and to do a statistical analysis of data on lead content for significantly traded fish species (identified by Latin names) that might cause problems in international trade (e.g. tuna, salmon, mackerel, cod, herring, pollack and sardines).

---

66 Comments submitted in response to CL 2002/10-FAC from the Czech Republic, Denmark, Korea, the Philippines, USA, WHO (CX/FAC 03/26), Korea, USA and EC (CRD 17).

67 ALINORM 03/12, paras. 133-134 and Appendices XIII and XX.

68 http://www.who.int/fsf/Chemicalcontaminants/index2.htm. The GEMS/Food database is also accessible throught http://sight.who.ch/

COMMENTS SUBMITTED ON THE MAXIMUM LEVELS FOR LEAD IN MILK AND MILK FAT IN RESPONSE TO CL 2002/10-FAC (Agenda Item 16b)[69]

143. The Committee noted that the maximum levels of lead in milk (0.02 mg/kg) and milk fat (0.1mg/kg) were adopted by the 24th Session of the Codex Alimentarius Commission (July 2001) as final Codex texts, and that the Commission requested the CCFAC to reevaluate the levels at a future meeting.[70]

144. As directed by the Commission, the 34th Session of the CCFAC decided that comments should be requested on the adopted maximum levels for lead in milk and milk fat for further consideration at its current Session.[71]

145. Several delegations suggested deletion of the maximum level of 0.1 mg/kg for milk fat as the product did not contribute significantly to total lead intake.

146. Several delegations suggested deletion of the footnote to the maximum level for lead in milk that stated "for dairy products, an appropriate concentration factor should apply" as it was felt to be ambiguous and overly broad. However, as a compromise solution, the Committee agreed that the footnote should be revised to read that a concentration factor applies "for partially or wholly dehydrated milk".

147. Some delegations also suggested the deletion of the maximum level for lead in milk in its entirety, as milk was not a major contributor to the intake of lead from all sources. However, other delegations were of the opinion that, based on JECFA evaluations, the level should be maintained because milk was a major contributor to dietary exposure, especially for infants and young children.

148. The Committee decided to inform the Commission that the level of 0.02 mg/kg for lead in milk should be maintained, and that the footnote should be revised to read "a concentration factor applies to partially or wholly dehydrated milk". The Committee also decided to inform the Commission that the current level for lead in milk fat (0.1 mg/kg) should be revoked.

149. India did not support the limit for lead in milk as it was not supported by science and expressed its reservation.

PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF LEAD CONTAMINATION IN FOODS (Agenda Item 16c)[72]

150. The 34th Session of the CCFAC decided[73] that a drafting group led by the United States would elaborate a proposed draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods, subject to confirmation by the Executive Committee. The 50th Session of the Executive Committee approved the proposal as new work.[74]

151. The Committee noted the offer from the EC to provide text in the next revision of the Code of Practice to address exposure to lead from the use of calabash chalk by some populations, with the suggestion that such text be included in the document under a new title of "sources of lead in food".

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

152. The Committee forwarded the draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods to the 26th Session of the Commission for preliminary adoption at Step 5 (see appendix XII).

---

69 Comments submitted in response to CL 2002/10-FAC from Denmark and New Zealand (CX/FAC 03/27).
70 ALINORM 01/41, para. 121.
71 ALINORM 03/12, para. 137.
72 CX/FAC 03/28 and comments submitted by Poland (CX/FAC 03/28-Add. 1) and the EC (CRD 18).
73 ALINORM 03/12, para. 138.
74 ALINORM 03/3A, Appendix III.

DISCUSSION PAPER ON TIN (Agenda Item 16d)[75]

153. The 34th Session of the CCFAC agreed that Australia would revise the Discussion Paper on Tin for circulation, comments and further consideration at its next Session.[76]

154. In view of its discussions under agenda item 16e (see below), the Committee decided that the Discussion paper had served its purpose and therefore, discontinued its future consideration.

COMMENTS SUBMITTED ON THE PROPOSED DRAFT MAXIMUM LEVELS FOR TIN IN RESPONSE TO CL 2002/10-FAC (Agenda Item 16e)[77]

155. The 34th Session of the CCFAC returned the proposed draft maximum levels for tin (200 mg/kg in liquid canned foods and 250 mg/kg in solid canned foods) for circulation, comments and further consideration at its next Session.[78]

156. The Committee agreed to change the terminology regarding "solid and liquid canned foods" to "canned foods other than beverages" and "canned beverages".

157. The Committee noted the opinion that migration of tin was sometimes intended for product quality and in those cases, tin should be regarded as food additive (e.g., active packaging).

158. The representatives of the WHO and JECFA noted that there was no acute reference dose for tin and that limited human data indicated that concentrations of 150 mg/kg tin in canned beverages and 250 mg/kg in other canned foods might produce reversible gastric irritation in a limited number of sensitive subjects only.

159. Several delegations were in favor of lower levels because lower limits were feasible to attain in their countries. Other delegations explained that lower limits were not necessary requesting that the proposed draft maximum levels be maintained and that lower levels would result in disruptions to international trade.

Status of the Proposed Draft Maximum Levels for Tin

160. The Committee could not reach consensus on the proposed draft maximum levels for tin and decided to return (with the revised product descriptors) the levels to Step 3 for comment and further consideration at its 36th Session (see Appendix XIII).

161. 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. The Committee noted that new data would become available.

162. The Committee also agreed that a Code of Practice for the Prevention and Reduction of Tin should be elaborated under the direction of Australia, with assistance provided by Denmark, Greece, the Netherlands, the Philippines, Poland, Switzerland, Thailand, United Kingdom and the EC, for circulation, comment and further consideration at its next Session.

---

75 CX/FAC 03/29 and comments submitted by Poland, South Africa, EC (CX/FAC 03/29-Add. 1) and the EC (CRD 19).

76 ALINORM 03/12, para. 147.

77 Comments submitted in response to CL 2002/10-FAC from Denmark, EC (CX/FAC 03/30) and the EC (CRD 19).

78 ALINORM 03/12, para. 146 and Appendix XV.

COMMENTS SUBMITTED ON THE PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM IN RESPONSE TO CL 2002/10-FAC (Agenda Item 16f)[79]

163. The 34th Session of the CCFAC returned the proposed draft maximum levels for cadmium in various commodities for circulation, comments and further consideration at its next Session.[80] The Committee also noted that the 50th Session of the Executive Committee approved the CCFAC proposal to discontinue work on the proposed maximum levels for cadmium in crustaceans, liver and kidney.[81]

164. The Committee accepted written suggestions provided by the delegation of Japan in its written comment for the addition of product code numbers as well as other minor revision to the product descriptions. The Committee decided to return the levels for molluscs, peanuts, rice and soya beans to Step 3.

Status of the Proposed Draft Maximum Levels for Cadmium

165. The Committee decided to return the proposed draft maximum levels for cadmium in rice, polished; soy bean (dry); molluscs (including cephalopods); and peanuts at Step 3 (see Appendix XIV) for circulation, comments and further consideration at its 36th Session. The remaining proposed draft maximum levels for cadmium were forwarded to the 26th Session of the Codex Alimentarius Commission for preliminary adoption at Step 5 (see Appendix XIV). The delegation of Japan stated that it did not agree with the advancement of these proposed draft maximum levels to Step 5 in view of the decision made at the 49th Session of the CCEXEC[82] and because Japan had submitted data to JECFA for conducting an exposure assessment.

POSITION PAPER ON DIOXINS AND DIOXIN LIKE PCBs, INCLUDING INFORMATION SUBMITTED ON ACTUAL LEVELS AND METHODS OF ANALYSIS FOR DIOXINS AND DIOXIN LIKE PCBs (Agenda Item 16g)[83]

166. The 34th Session of the CCFAC agreed that a drafting group led by the Netherlands would revise the Position Paper on Dioxins and Dioxin Like PCBs, including methods of analysis for dioxins and dioxin like PCBs, for circulation, comment and consideration at its current meeting. The 34th CCFAC also agreed to request information on actual dioxin and dioxin-like PCB levels and information on inexpensive, quick and valid analytical (screening confirmation) methods for consideration at its next Session.[84]

Methods of Analysis and Sampling for Dioxins and Dioxin like PCBs

167. The 24th Session (November 2002) of the Codex Committee on Methods of Analysis and Sampling (CCMAS) agreed that comments would be requested on proposals for the determination of dioxins and dioxin like PCBs for consideration at its 25th Session.[85] In view of the decision taken by the CCMAS, the Committee decided to discontinue the consideration of methods of analysis for the determination of dioxins and dioxin-like PCBs for the time being, and with the understanding that the methods would be returned to the CCFAC for consideration.

Position Paper on Dioxins and Dioxin like PCBs

168. It was noted that the concentration of dioxins and dioxin like PCBs in fish liver oil was greater than in fish body oil and that this difference should be reflected in future revisions to the text.

---

79 Comments submitted in response to CL 2002/10-FAC from Canada (CX/FAC 03/31), Japan, EC (CRD 20).
80 ALINORM 03/12, para. 143 and Appendix XIV.
81 ALINORM 03/3A, Appendix IV.
82 ALINORM 03/3, para. 20 and Appendix II.
83 CX/FAC 03/32 and comments submitted in response to CL 2002/10-FAC from Canada (CX/FAC 03/32-Add.1).
84 ALINORM 03/12 para. 153.
85 ALINORM 03/23, para. 5.

169. The Committee requested the Netherlands to revise the position paper on the basis of written comments submitted for circulation, comment and further consideration at its next Session. The Committee 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.

PROPOSED DRAFT CODE OF PRACTICE FOR SOURCE DIRECTED MEASURES TO REDUCE DIOXIN AND DIOXIN-LIKE PCBs CONTAMINATION OF FOODS (Agenda Item 16h)[86]

170. The 34th Session of the CCFAC agreed that a drafting group led by Germany would revise the proposed draft Code of Practice for Source Directed Measures to Reduce Dioxin and Dioxin-Like PCBs Contamination of Foods for circulation, comment and further consideration at its current Session.[87]

171. The Committee agreed that the document should be revised in the format of a code of practice on the basis of the current text and written comments submitted, in particular, Annex C of the Stockholm Convention on Persistent Organic Pollutants, which contained useful information in regard to sources and measures to reduce emissions of dioxins and dioxin-like PCBs.

172. The Committee agreed that the proposed draft Code of Practice for Source Directed Measures to Reduce Dioxins and Dioxin-Like PCBs Contamination of Foods would be elaborated by a drafting group led by Germany, with the assistance of Belgium, China, Finland, Japan, the Netherlands, EC, FEFAC and WHO, for circulation, comments and further consideration at its next Session.

POSITION PAPER ON CHLOROPROPANOLS (Agenda Item 16i)[88]

173. The 34th Session of the CCFAC requested the drafting group led by the United Kingdom to revise the Position Paper on Chloropropanols for circulation, comment and consideration at its next Session.[89] Due to time constraints, comments were not requested.

174. A number of delegations noted that all references to the term "soy sauce" should instead refer to "non traditionally fermented" or "acid hydrolyzed" (sauce), since chloropropanols had only been identified as a contaminant in acid-hydrolyzed vegetable protein (acid-HVP) sauces, but not in naturally fermented soy sauce. In this regard, the Committee noted that the Codex Committee on Processed Fruits and Vegetables (CCPFV) was elaborating (at Step 3) a Codex Standard for Soy Sauce, and that it differentiated between fermented and non-fermented soy sauces. Other delegations did not agree with this approach, and indicated that in their national legislations the term "soy sauce" did not apply to soy sauce made of acid-HVP.

175. The Committee noted the discussion held on this issue at the 13th last Session of the FAO/WHO Regional Coordinating Committee for Asia.[90] In this regard, the delegation of Thailand proposed to set a maximum level of 3-MCPD for acid-HVP soy sauce at a level of 1 mg/kg. The delegation of Thailand noted that this level had been established in the food legislation of a number of importing/exporting countries and requested the Committee to initiate the elaboration of a level and to request JECFA to perform a risk exposure assessment at the level proposed. This was felt to be of particular importance due to the great consumption of the product in the region and existing problems in international trade.

176. A number of delegations and the Representative of FAO concurred with this proposal; other delegations stated that further data was required on exposure to soy sauce and other products contributing to the intake of 3-MCPD before a maximum level was established. It was also noted that there were other foods that might also contribute to the overall intake of chloropropanols.

177. In this regard, the delegation of the United Kingdom informed the Committee that new studies had recently been completed on levels of chloropropanols in a range of foods, including soy sauce, and that in the coming year more data would enable a risk assessment to be conducted in the EC countries.

---

86 CX/FAC 03/33 and comments submitted from IBFAN (CX/FAC 03/33-Add.1), Malaysia, USA and EC (CRD 21-Rev.1).

87 ALINORM 03/12, para. 156.

88 CX/FAC 03/34 and CX/FAC 03/34-Add.1 (not issued).

89 ALINORM 03/12, para. 160.

90 ALINORM 03/15, para. 14.

178. The Committee could not reach a consensus on the elaboration of a maximum level of 1 mg/kg for acid-HVP soy sauce and therefore, it agreed to defer the elaboration of maximum levels in different foodstuffs until its next Session. The delegation of Thailand, supported by the delegation of Philippines, expressed its reservation to this decision.

179. The Committee agreed that the United Kingdom would revise the Position Paper on Chloropropanols on the basis of the above discussions, written comments submitted and data to be made available for circulation, comment 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.

DISCUSSION PAPER ON DEOXYNIVALENOL, INCLUDING INFORMATION AND DATA SUBMITTED ON THE OCCURRENCE OF DEOXYNIVALENOL IN CEREALS IN RESPONSE TO CL 2002/10-FAC (Agenda Item 16j)[91]

180. The 34th Session of the CCFAC agreed that a drafting group led by Belgium would revise the Discussion Paper on Deoxynivalenol (DON) for circulation, comments and consideration at its next Session. The 34th CCFAC also agreed to request additional information and data on the occurrence of DON in cereals, as well as the results of any studies on the effect of processing, for consideration at its current Session.[92] The Codex Secretariat noted that this subject would be considered under the agenda item concerning Mycotoxins in Foods and Animal Feeds at the next Session.

181. The Delegation of Greece, speaking on behalf of the Member states of the EC present at the Session, noted that with regard to decontamination, the EC supported the use of physical decontamination processes and sorting procedures but did not agree on the use of chemical decontamination procedures.

182. The Committee agreed to discontinue the consideration of the discussion paper and to commence work on the elaboration of maximum levels for DON, with the understanding that this proposal was subject to approval as new work by the Codex Alimentarius Commission. The Committee agreed that proposals for maximum levels as well as information on the different species involved would be solicited by circular letter.

COMMENTS ON THE PRIORITY LIST OF FOOD ADDITIVES, CONTAMINANTS AND NATURALLY OCCURRING TOXICANTS PROPOSED FOR EVALUATION BY JECFA IN RESPONSE TO CL 2002/10-FAC (Agenda item 17)[93]

183. The 34th Session of the CCFAC agreed to request[94] additional comments for additions or amendments to its Priority List for consideration at the current meeting. Mr J. Dornseiffen (Netherlands) introduced the report of the Informal *ad hoc* Working Group on Priorities.[95] He noted that the 34th Session of the Committee agreed that the Priority List should cover several years work to allow for long-term planning of the priorities for JECFA.

184. The Working Group proposed the addition of the following substances to the CCFAC list of priorities:

- Food additives: 173 flavours, two enzymes, stevioside
- Contaminants and natural toxicants: acrylamide

185. The Committee noted that data had been submitted for all substances on the agenda of the forthcoming 61st meeting of JECFA. Consequently, these substances were removed from the list. In addition, the Committee noted the removal of 2-alkyl-cyclobutanones from the list following a suggestion of the representative of the European Commission. The Scientific Committee for Food had concluded recently that the toxicological studies available were not suitable for a risk assessment.

---

91 CX/FAC 03/35 and comments submitted in response to CL 2002/10-FAC from Australia, Canada, Uruguay and ISDI (CX/FAC 03/35-Add.1) and the EC (CRD 22).

92 ALINORM 03/12, para. 163.

93 Comments submitted in response to CL 2002/10-FAC from the USA, IFU (CX/FAC 03/36) and Denmark (CRD 23).

94 ALINORM 03/12, para. 169 and Appendix XVI.

95 CRD 23.

186. The representative of WHO informed the Committee that the US delegation had forwarded a request for the evaluation of five substances used in antimicrobial washing solutions. Since commitment for the submission of data was expressed, the Committee agreed to add these to the priority list with low priority. The Joint Secretariat would decide when these substances could be evaluated by JECFA.

187. The delegation of Japan informed the Committee that data on stevioside, including information on the manufacturing process, could be made available in time for a proposed JECFA meeting in June 2004. The Committee took note of China's remark that Japan would be the leading country for submission of data to the Expert Committee.

188. The delegation of the Philippines suggested that JECFA should conduct a risk assessment for a maximum level of 0.5 mg/kg for lead in fish. The FAO Joint Secretary referred to the recent 53rd Meeting of JECFA when the assigned experts had considered several exposure scenarios, including one model using the maximum limits proposed by CCFAC or adopted by the CAC. On all approaches evaluated, the Expert Committee's opinion was that the risk due to the dietary exposure to lead was negligible. Based on the report[96] and the monograph[97] from the 53rd meeting of JECFA, the FAO Joint Secretary stated that a discussion of an alternative level of 0.5 mg/kg for lead in fish within CCFAC should be possible without referring the issue to JECFA. The delegation of the Philippines requested that JECFA present a discussion paper on the evaluation of the exposure assessment from lead in fish at the next CCFAC meeting. The Joint Secretariat offered corresponding assistance before and at the forthcoming meeting.

189. The delegation of India suggested to request a risk assessment for the maximum level for lead in milk.

190. The Committee agreed on the Priority List of Food Additives, Contaminants, and Naturally Occurring Toxicants Proposed for Evaluation by JECFA as presented in Appendix XV. The substances of highest priority were indicated with a footnote. The Committee noted the current plans of the JECFA Secretariat for the forthcoming JECFA meetings, including an indication of when the substances with high priority could be put on the agenda. The final planning would depend on the timing and availability of the results from an IPCS consultation on so-called "quantitative risk assessment", a topic of importance for JECFA's evaluation of acrylamide and ethyl carbamate.

191. The Committee agreed to ask the Codex Secretariat, in coordination with the Joint Secretariat, to request more information on aluminium, beeswax and candelilla wax. The Committee also agreed to request additional comments for additions or amendments to its Priority List for consideration at its next Session.

OTHER BUSINESS AND FUTURE WORK (Agenda Item 18)

OTHER BUSINESS

192. The delegation of India, supported by the delegation of Philippines, noted that it did not support CCFAC establishment of maximum levels for food additives and contaminants under the current procedures. The delegation of India suggested a division of responsibilities between CCFAC and JECFA as was standard practice in the establishment of maximum limits or maximum levels of residues by the Codex Committees on Pesticide Residues and on Residues of Veterinary Drugs in Foods, respectively (i.e., whereby JMPR/JECFA recommends the maximum limits for pesticides/maximum residue levels for veterinary drugs). In the view of the delegation of India, this would result in the following benefits:

- Promotion of the widest and most consistent application of scientific principles and risk analysis in compliance with Objective 2 of the Codex Strategic Framework 2003-2007;
- Expedite the deliberations of the CCFAC as it could base its work on recommendations arising from JECFA on maximum or guideline levels for food additives and contaminants;
- Harmonize the working procedures throughout similar Codex committees, i.e., the Codex Committee on Pesticide Residues and the Codex Committee on Residues of Veterinary Drugs in Foods, and;
- The resulting standard would facilitate efforts to improve food safety and promote fair trade practices.

---

96 WHO Technical Report Series No. 896.

97 WHO Food Additive Series No. 44.

FUTURE WORK

193. The Committee noted that the following items would be scheduled for discussion at its 36th Session:

Discussion Paper on Acrylamide

194. The Committee agreed that a drafting group led by the United Kingdom and the USA (subject to confirmation), with the assistance of Australia, Ireland, Japan, Switzerland, the Netherlands, EC, INC and WHO, would prepare a Discussion Paper on Acrylamide for circulation, comments and further consideration at its 36th Session.

195. In this regard, the Committee noted the difficulties experienced by countries in identifying and measuring acrylamide and other contaminants, especially taking into account that children were a population subjected to higher consumption of some of the foods related to acrylamide exposure. The Committee noted that assistance, including from FAO and WHO, was needed to enhance capacity building in this area, particularly in developing countries.

Request for Data on Mycotoxin Contamination in Sorghum

196. At the request of the delegation of Sudan, the Committee agreed to solicit information and data on mycotoxin contamination in sorghum for consideration at its 36th Session.

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

197. The Committee was informed that the 36th Session of the Codex Committee on Food Additives and Contaminants was tentatively scheduled to be held in the Netherlands in 2004, subject to discussions between the Dutch and Codex Secretariats.

ANNEX

CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

SUMMARY STATUS OF WORK

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 03/12A)
Draft Revisions to the Annex to Table 3 of the Codex General Standard for Food Additives	8	26th CAC	Para. 56 and Appendix III
Draft Revised Codex General Standard for Irradiated Foods	8	26th CAC	Para. 78 and Appendix V
Draft Code of Practice for the Prevention and Reduction of Patulin Contamination in Apple Juice and Apple Juice Ingredients in Other Beverages	8	26th CAC	Para. 123 and Appendix IX
Draft Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals, Including Annexes on Ochratoxin A, Zearalenone, Fumonisins and Tricothecenes	8	26th CAC	Para. 127 and Appendix X
Draft and Proposed Draft Revisions to the INS for Food Additives	8 and 5/8	26th CAC	Paras. 96, 99 and Appendix VII
Specifications for the Identity and Purity of Food Additives (Categories I and II) arising from the 59th JECFA Meeting	5/8	26th CAC	Para. 94 and Appendix VI
Draft Maximum Level for Lead in Fish	6	Comments 36th CCFAC	Paras. 140-142 and Appendix XIII of ALINORM 03/12
Draft and Proposed Draft Revisions to Table 1 of the Codex General Standard for Food Additives	6 and 3	Comments 36th CCFAC	Para. 53
Proposed Draft Risk Analysis Principles applied by the Codex Committee on Food Additives and Contaminants	5	26th CAC Comments 36th CCFAC	Para. 28 and Appendix IV
Proposed Draft Revised Food Category System of the Codex General Standard for Food Additives	5	26th CAC Comments 36th CCFAC	Para. 51 and Appendix II
Proposed Draft Principles for Exposure Assessment of Contaminants and Toxins in Foods	5	26th CAC Comments 36th CCFAC	Para. 119 and Appendix VIII
Proposed Draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts	5	26th CAC Comments 36th CCFAC	Para. 136 and Appendix XI

ANNEX

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 03/12A)
Proposed Draft Code of Practice for the Prevention and Reduction of Lead Contamination in Foods	5	26th CAC Comments 36th CCFAC	Para. 152 and Appendix XII
Proposed Draft Maximum Levels for Cadmium	5	26th CAC Comments 36th CCFAC	Para. 165 and Appendix XIV
	3	Comments 36th CCFAC	
Proposed Draft Maximum Levels for Tin	3	Comments 36th CCFAC	Para. 160 and Appendix XIII
Proposed Draft Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Tree Nuts	2/3	China Comments 36th CCFAC	Para. 133
Proposed Draft Code of Practice for Source Directed Measures to Reduce Dioxin and Dioxin Like PCB Contamination of Foods	2/3	Germany Comments 36th CCFAC	Para. 172
Proposed Draft Revised Preamble to the Codex General Standard for Food Additives	1/2/3	26th CAC Switzerland Comments 36th CCFAC	Paras. 47-48
Proposed Draft Code of Practice for the Safe Use of Active Chlorine	1/2/3	26th CAC Denmark Comments 36th CCFAC	Paras. 67-68
Proposed Draft Revised 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	1/2/3	26th CAC IAEA/Finland Comments 36th CCFAC	Para. 84
Proposed Draft Maximum Levels for Aflatoxins in Almonds, Hazelnuts and Pistachios	1/2/3	26th CAC Comments 36th CAC	Para. 129
Proposed Draft Code of Practice for the Prevention and Reduction of Tin Contamination in Foods	1/2/3	26th CAC Australia Comments 36th CCFAC	Para. 162
Proposed Draft Maximum Levels for Deoxynivalenol	1/2/3	26th CAC Comments 36th CCFAC	Para. 182
Action required as a result of changes in ADI Status and Other Toxicological Recommendations	-----	Comments 36th CCFAC	Paras. 15-16 and 36-37

ANNEX

SUBJECT	STEP	FOR ACTION BY:	DOCUMENT REFERENCE (ALINORM 03/12A)
Discussion Paper on Processing Aids and Carriers	-----	Switzerland Comments 36th CCFAC	Para. 60
Discussion Paper on the Harmonization of Terms Used by Codex and JECFA for Sub-Classes and Technological Functions	-----	Codex Comments 36th CCFAC	Para. 101
Schedule 1 of the Proposed Draft Codex General Standard for Contaminants and Toxins in Foods	-----	Netherlands/Codex Comments 36th CCFAC	Para. 110
Maximum Level for Patulin in Apple Juice and Apple Juice Ingredients in Other Beverages	-----	Comments 36th CCFAC	Para. 125
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	-----	Iran Comments 36th CCFAC	Para. 131
Maximum Levels for Lead in Milk and Milk Fat	-----	26th CAC	Para. 148
Position Paper on Chloropropanols	-----	United Kingdom Comments 36th CCFAC	Para. 179
Priority List of Food Additives, Contaminants and Naturally Occurring Toxicants Proposed for Evaluation by JECFA	-----	Comments 36th CCFAC	Paras. 184 – 191 and Appendix XV
Discussion Paper on Acrylamyde	----	United Kingdom Comments 36th CCFAC	Para. 194
Mycotoxin Contamination in Sorgum	-----	Comments 36th CCFAC	Para. 196
Position Paper on Dioxins and Dioxin Like PCBs	-----	Netherlands Comments 36th CCFAC	Para. 169

APPENDIX I

LIST OF PARTICIPANTS
LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

Chairman of the Session:
Président de la Session:
Presidente de la Reunión:

Mr. Edwin F.F. Hecker
Ministry of Agriculture, Nature Management and Fisheries
P.O. Box 20401
2500 EK Den Haag
The Netherlands
Tel.: + 31.70.378.5686
Fax: + 31.70.378.6141
E-mail: info@codexalimentarius.nl

AUSTRALIA

Dr. Paul Brent
Food Standards Australia New Zealand
55, Blackall street Barton ACT.
AUSTRALIA
Tel: +612 62712279
Fax: +612 62712278
E-mail: paul.brent@foodstandards.gov.au

Dr. Simon Brooke-Taylor
Director/ Principal Consultant
Brooke-Taylor & Co Pty. Ltd.
2, Joseph Street
Woonona NSW 2517
AUSTRALIA
Tel: +612 4283 4257
Fax: +612 4283 4257
E-mail: simon@brooketaylor.com.au

AUSTRIA

Mr.Dr. Oswald Kraeutler
Head of Department 12
AGES LUVIE
Kinderspitagasse 15
1090 WIEN
AUSTRIA
Tel: 0043-1-40490 27850
Fax: 0043-1-40490 9278
E-mail: oswald.kraeutler@luvie.ages.at

BELGIUM

Mrs. Dr. Christine Vinkx
Federal Government service
Public Health Safety of the Food Chain and Environment
Boulevard Pachéco 19 Bte 5
B-1010 Brussel
BELGIUM
Tel: + 32 22 10 4837
Fax: + 32 22 10 4816
E-mail : Christine.vinkx@health.fgov.be

BOTSWANA

Mr. Abdul Rahamani A. Napinda
Director of Standards
Botswana Bureau of Standards
Private Bag BO 48
Gaborone,
Botswana
Tel. : +267 3164044
Fax. : +267 3164042
Email. : a.napinda@bobstandars.bw

Mr Hussein H.T. Tarimo
Secretary National Control Board
Principal Scientific Officer
Food Control Unit
Ministy of Health
Private Bag 00269
Gaborone,
Botswana
Tel. : +267 3974351
Fax : +267 3974354
Email : nfcbgabs@global.bw

Mr Charles M. Mokgobinyane
Assistant Scientific Officer
Food Control Unit
Ministry of Health
Private Bag 00269
Gaborone,
Botswana
Tel. : +267 3974351
Fax. : +267 3974354
Email.: nfcbgabs@global.bw

Mrs. Keolebogile Segomelo-kibuuka
Senior Standards Officer
Botswna Bureau of Standards
Private Bag BO 48
Gaborone,
Botswana
Tel. : +267 3164044
Fax. : +267 3164042
Email. : k_segomelo@bobstandards.bw

BRAZIL

Cintia Ayako Nagano
Food Engineer
Brazilian Health Surveillance Agency
Ministry of Health
SEPN 515, Bloco B ed. Ômega, 3 Andar
Brasilia
BRAZIL
Tel : +55 61 448 1116
Fax : +55 61 448 1080
E-mail : cintia.ayako@anvisa.gov.br

Ester Aguiar
Medica Veterinaria
Ministerio de Agricultura, Pecuaria e Abastecimento
Esplanada dos Ministerios, Bloco D,
ALA/B 1 Andar
Sala 116
Brasilia
BRAZIL
Tel : +55 61 218 2438
Fax : +55 61 218 2727
E-mail : eaguiar@agricultura.gov.br

CAMEROUN

Mr. Remy Mbang A Moudon
Sous-Directeur Hygiene Publique et Assainissement MINSANTE
B.P. 11009
Yaounde
CAMEROUN
Tel: +237 2239348
Fax: +237 2224419
E-mail: remymoundon@yahoo.fr

CHINA

Dr. Junshi Chen
Scientist
Institute of Nutrition and Food Safety, Chinese Center for Disease Control and Prevention
29 Nanwei Rd
Beijing 100050
CHINA
Tel: +8610.63187585
Fax: +8610 63011875
E-mail: jschen@95777.com

Mr. Jianrong Wang
Deputy Director General
Department of Health Legislation and Inspection,
Ministry of Health P.R. China
No 1 Xizhimenwai Nanlu
Beijing 100044
CHINA
Tel: +8610 68792510
Fax: +8610 68792387
E-mail: wjr2510@yahoo.com.cn

Mr. Danzhou Tang
Director
Animal Plant Foodstuffs Inspection Center of Tianjing
CIQ of P.R.C.
300201 Tianjin
CHINA
Tel: +86-2228375869
Fax:+86-2228375869
E-mail: tdzwh@163.com

Dr. Yongning Wu
Professor and Director
Department of Monitoring and Control for Contaminants
National Institute of Nutrition and Food Safety, Chinese Center for Disease Control and Prevention
29 Nanwei Road
10050 Beijing
CHINA
Tel: +86 10 83164557
Fax: +8610 63011875
E-mail: wuyn@public.bta.net.cn

Mr. Yibing Zhang
Director of Department
Department of Science and Technology
Quangxia Road 70
Qingdao 266002
CHINA
Tel: +86 532 2671054
Fax: +86 532 2671054
E-mail: zhangyibing@163.com

Dr. Samuel Tze-Kiu Yeung
Senior Medical Officer
Food and Environmental Hygiene Department
45 F, Queensway Goverment Offices
66, Queensway
Hong Kong
CHINA
Tel: +852 2867 5508
Fax: +852 2536 9731
E-mail: stkyeung@fehd.gov.hk

Mr. Zhao hui Ma
Food Health Inspection Department
Beijing Institute of Health Inspection
No. A1 zhongfang Street,
Chaoyang District Beijing
CHINA
Tel:+ 86-10 65007149
Fax: 86-10 65007127
E-mail:cuiweima@sina.com

CZECH REPUBLIC

Daniela Winklerova
Head of National Reference Laboratory on Food Additives
National Institute of Public Health
Srobarova 48
CZ 100 42 Prague 10
CZECH REPUBLIC
Tel: +42.02.670.82.41
Fax: +42.02.670.82.318
E-mail: winklerova@szv.cz

Spelina Vladimir
Head of the Laboatory
Nat. Inst. Of Public Health
CZECH REPUBLIC
Tel: +420267032763
E-mail: v.spelina@szv.cz

DENMARK

Mrs. Bente Fabech
Scientific Adviser
Danish Veterinary and Food Administration
Morkhoj Bygade 19
DK 2860 Sorborg
DENMARK
Tel: +45 33 95 6195
Fax: +45 43 95 6695
E-mail: bfa@fdir.dk

Mrs. Inge Meyland
Senior Scientific Adviser
Danish Veterinary and Food Administration
Morkhoj Bygade 19
DK 2860 Soborg
DENMARK
Tel: +45.33.956.100
Fax: +45.33.956.028
E-mail: IME@FDIR.DK

Mrs. Hanne Juel Christoffersen
Scientific Adviser
Danish Veterinary and Food Administration
Morkhoj Bygade 19
DK-2860 Soborg
DENMARK
Tel: +45 33 95 6000
Fax: +45 33 95 6060
E-mail: hjc@fdir.dk

EGYPT

Mr. Keshtah Mohamed
Egyptian Embassy
Diplomatic attache
Dar Es Salaam
TANZANIA
Tel: 2117622
Fax: 2113591
e-mail: salsohaa@hotmail.com

ETHIOPIA

Mr. Gashaw Workneh
Quality Manager
National Codex Officer
Quality and Standards Authority of Ethiopia
P.O.Box 2310
Addis Ababa
ETHIOPIA
Tel: +251 1 460858
Fax: +251 1 460880
E-mail: qsae@telecom.net.et

FINLAND

Dr. Anja Hallikainen
Senior Scientific Officer, Ph. D.
National Food Agency
P.O.Box 28
FIN-00581 Helsinki
FINLAND
Tel: +358.50 3868433
Fax: +358.9.3931592
E-mail: anja.hallikainen@nfa.fi

Ms. Harriet Wallin
Senior Officer Food Control
National Food Agency
P.O. Box 28
FIN- 00581 Helsinki
FINLAND
Tel: +358.9.3931557
Fax: +358.9.3931593
E-mail: harriet.wallin@nfa.fi

Mr. Esko Niemi
Head of Section
Finnisch Customs Laboratory
Tekniikantie 13
FIN-02150 Espoo
FINLAND
Tel: +358.9.6141mo
Fax: +358.9.463.383
E-mail: esko.niemi@tulli.fi

GERMANY

Mr. Hermann Brei
Regierungsdirektor
Bundesministerium für Verbraucherschutz,
Ernährung und Landwirschaft
Rochusstrasse 1
D-53123 Bonn-Duisdorf
GERMANY
Tel: +49.228.529.4655
Fax: +49.228.529.4842
E-mail: hermann.brei@bmvel.bund.de

Dr. Heino Rosner
Member
Federal Office for Protection of Consumers and
Food Safety
Rochusstrase 65
D-53123 Bonn
GERMANY
Tel: +49 0 28 6198 226
Fax: +49 0 28 6198 120
E-mail: Heino.Rosner@bvl.bund.de

GHANA

Mr. Jonathan Martey
Principal Regulatory Officer
Food and Drugs Board
P.O.Box CT 2783
Cantonments Accra
GHANA
Tel: +233 21 660489
Fax: +233 21 660389
E-mail: fdb@ghana.com

GREECE

Dr. Konstantinos Malidis
Researcher of Technology
Inst. of Agriculture Products
1 S. Venizelostr.
Athens 14123
GREECE
Tel: 0030 210 2945940
Fax: 0030 210 2940740
E-mail: itap@otenet.gr

Mr. George Argyrakos
Greek Ministry of Agriculture
Acharnon 2
10176 Athens
GREECE
Tel: +30 21 02 124 273
Fax: + 30 21 05 238 337
E-mail: ax2u051@minagric.gr

HUNGARY

Dr. Judit Sohár
Head of Department of Food Additives and Contaminants
National Institute of Food Hygiene and Nutrition
"Fodor József" National Centre of Public Health
P.O.Box. 52
H-1097 Budapest, Gyali ut 3/a
HUNGARY
Tel: +36.1.215.5293
Fax: +36.1.215.5293
E-mail: h13114soh@ella.hu

Dr. K. Szerdahelyi
Senior Counsellor
Ministry of Agriculture and Regional Development
PO.Box 1,
Kossuth L. ter 11
H-1860 Budapest
HUNGARY
Tel: +36 1 301 4110
Fax: +36-1 301 4808
E-mail: tanya.szerdahelyi@fvm.hu

INDIA

Mr. Aditya K. Jain
AE QPM
National Dairy Development Board
Anand
INDIA
Tel: +91 02692 226256
Fax: +91 02692 260157
E-mail: aditya@nddb.coop

INDONESIA

Mr. Subandrid
First Secretary
Indonesia Embassy Dar Es Salaam
P.O. Box 572
Dar es Salaam
TANZANIA
Tel: +2119119
Fax: +215849
e-mail: kbridsm@raha.com

IRAN

Dr. Hassan Yazdanpanah
Head of Iran CCFAC
School of Pharmacy Shaheed Beheshti Univ. Med.sc.
P.O. Box 14155-6153
Tehran
IRAN
Tel: +98 218 77 3523
Fax: +98 218 79 5008
E-mail: hasyazdan@yahoo.com

Mr. Mir Behrouz Gheibi
DG Pistachio Affairs of codex Committee on Fruite and Vegatables
Minstry of Jihad e Agriculture
IRAN
Tel: +98 216 499 119
Fax: +98 216 499 118
E-mail: b.ghaibi@agri.jahad.org

Dr. A. Majid Cheraghali
General Director, Food and Drug Control Labs
Ministry of Health
Teharan
IRAN
Tel: +98 216 406174
Fax: +98 216 404330
E-mail: m.cheraghali@BMSU.AC.IR

Dr. Mehrdad Tajkarimi
Export of industrial investingation office, Dairy Industries
Company from Iran
57, West Ghobadianst. Valimen Asr. Ave
Tehran
IRAN
Tel: +98 218 790 962
Fax :+98 218 786507
E-mail:iidp@irandairy.com

Mr. Vahid Mofid
General director Food Hygiemic, Cosmetic Supervision Dept.
Ministry of Health and Medical Education
13145 719 Tehran
IRAN
Tel: +9821 6467 494
Fax: +9821 6467 265
E-mail: mofid@hbi.dmr.or.ir

Dr. Shahriar Dabirian
Export of industrial investingation office, Dairy Industries
Company from Iran
57, West Ghobadianst. Valimen Asr. Ave
Tehran
IRAN
Tel: +98 216 809252
Fax :+98 216 80584
E-mail :lab-the-gegan@ani.sa.com

IRELAND

Dr. Iona Pratt
Chief Specialist in Toxicology
Food Safety Authority of Ireland
Abbey Court, Lower Abbey street
Dublin 1
IRELAND
Tel: +35 31 817 1355
Fax: +35 31 817 1301
E-mail: ipratt@fsai_ie

JAPAN

Dr. Yukiko Yamada
Director for International Affairs
Food Research
National Food Research Institute
2-1-12 Kannondai
Tsukuba 305-8642
JAPAN
Tel: +81 29-838 8017
Fax: +81 29-838-8005
E-mail: yukiko.yamada@affrc.go.jp

Mr. Hidehiko Hagiwara
Deputy Director
Standards and Labeling Division, General Food Policy Bureau, Ministry of Agriculture, Forestry and Fisheries
1 2 1 Ohiyoda
100 8950 Chiyoda-ku, Tokyo
JAPAN
Tel: +81 3642 8111
Fax: +81 3 3501 0580
E-mail: hidehiko-hagiware@nm.maff.gr.jp

Mr. Kenj Asakura
Deputy Director
Corp Production Devision, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries
121 Kasumigaseki
Tokyo
JAPAN
Tel: +81.3.3591 4958
Fax: +81.3.3502 0869
E-mail: HYPERLINK "mailto:kenji_asakura@nm.maff.go.jp" kenji_asakura@nm.maff.go.jp

Mr. Masato Fukushima
Deputy Director
Consumtion Improvement Division
121 Kasumigaseki
100 8950 Chiyoda-ku Tokyo
JAPAN
Tel: +81 3 3501 3796
Fax: +81 3 3502 5370
E-mail: masato_fukushima@syokuryo.maff.go.jp

Mr. Hiroyuki Sasaki
Section Chief
Processing and Marketing Division
Fisheries angency
Ministry of Agriculture, Forestry and Fisheries
1-2-1 Kasumigaseki, Chiyoda_ko
Tokyo 100-8907
JAPAN
Tel: +81 3 3501 1961
Fax:+81 3 3591 6867
E-mail: hiroyuki_sasaki@nm.maff.go.jp

Mr. Toshifumi Fujita
Section Cief
International Affairs Division,
Standard and Labeling Department,
Center for Food and Quality, Labeling and
Consumers Services Headquaters
Kitafukuro-cho 1 21 2
220 9731 Saitama City, Saitama
JAPAN
Tel: +81 48 600 2375
Fax: +81 48 600 2373
E-mail: toshifumi-fujita@cfg/cs.go.jp

Dr. Rie Masho
Technical Advisor
Center for Environmental Information Science
Kundan-minami 4 7 24
102 0074 Chiyada-ku, Tokyo
JAPAN
Tel: +81 3 3265 3916
Fax: +81 3 3234 5407
E-mail: masho@ceis.or.jp

KENYA

Mr. Joseph K. Keeru
Senior Principal Standards Officer
P.O. Box 54974
Nairobi-00200
KENYA
Tel : +254 2 502210
Fax : +254 2 609660
e-mail : HYPERLINK "mailto:info@kebs.org"
info@kebs.org

Dr. J.P. Nttiuli
Deputy director of Veterinairy Services
P.O.Box 00625,
Kangemi,
Ken Yn
Tel: +254 2 631289
Fax:+254 2 631273

Ms. Elizabeth M. Maindi
Chief Principal Quality Assurance Officer
Kenya Bureau of Standards
P.O. Box 54974
Nairobi-00200
KENYA
Tel : +254 2 502210
Fax : +254 2 609660
e-mail : HYPERLINK "mailto:info@kebs.org"
info@kebs.org

Mr. Joel N. Gikubu
Senior Principal Laoratory Analist
Kenya Bureau of Standard
P.O. Box 54974
Nairobi-00200
KENYA
Tel : +254 2 502210
Fax : +254 2 609660
e-mail : HYPERLINK "mailto:info@kebs.org"
info@kebs.org

KOREA, REPUBLIC OF

Dr. Meehye Kim
Chief Research scientist
Korea Food and Drug Administration
5 Nokbun-dong
Eunpyung gu, Seoul
KOREA
Tel: 82 2 380 1670
Fax: 82 2 382 4892
E-mail:meehkim@kfda.go.kr

Ms. Woojung Kwon
Senior researcher
Ministry of Health and Welfare
5 Nok Bun Dong
Eunpyoung ku, Seoul
KOREA
Tel: 82 2 380 1558
Fax: 82 2 383 8321
E-mail: HYPERLINK "mailto:wjkwon@"
wjkwon@ mohw.go.k

Dr. Kil Jin Kang
Researcher
Rep. Of Koreau
5 Nok Bon Dong, Eun Pyoung Ku
122-704 Seoul
KOREA
Tel: +82 2 380 1665
Fax: +82 2 382 4892
E-mail: kjkang@kfda.go.kr

Dr. Hae Jung Yoon
Senior Researcher
5 Nokbun Dong
Eunpyong-Ku, Seoul
KOREA
Tel: 82-2 380 1687
Fax: 82 2 354 1399
E-mail: HYPERLINK
"mailto:hjyoon@kfda.go.kr"
hjyoon@kfda.go.kr

Dr. Yang-Hee Cho
Head Researcher
59-1 Noryangin-Dong
Dong jak-Gu, Seoul
KOREA
Tel :0082 2 2194 7339
Fax : 0082 2 824 763
E-mail: HYPERLINK "mailto:choyh@khidi.or.kr" choyh@khidi.or.kr

MALAYSIA

Ms Nik Mohd.Salleh
Principal Assistant Director
Food Quality Control Division, Department of Public Health, Ministry of Health Malaysia
3rd Floor Block B, Health Offices Complex,
Jalan Cenderasar, 50590 Kuala Lumpur
MALAYSIA
Tel:+603-2684 6601
Fax: +603-2694 6517
E-mail: shabnam@moh.gov.my

Mr. Abdullah Ariffin
Regional Manager (Africa)
Malaysian Palm Oil Board
21, El Aanab Street
El Mohandessine, Giza
EGYPT
Tel: +202-7610174
Fax: +202-7610174
E-mail: mpobcai@access.com.eg

Mr. Jamal Khair Hashim
Principal Assistant Director
Food Quality Control Division, Department of Public Health,
Ministry of Health Malaysia 5
3rd Floor Block B, Health Offices Complex
Jalan Ceuderasari, 50590 Kuala Lumpur
MALAYSIA
Tel: +03 2694 6601
Fax: +03 2694 6517
E-mail: jamalkhair.@yahoo.com

Ms. Sharidah Yusoff
Regulatory Manager
C/o Federation of Malaysia Manufacturers Wisma FMM, 3 persiarah Dagong PJU 9,
Bandar Sri Daman Sara, 5200 Kuala Lumpur
MALAYSIA
Tel: +03 79554466
Fax: +03 79573645
E-mail: Sharidah.Yusoff@my.nestle.com

MOROCCO

Mr. Omar El Guermaz
Chef de la Division Technique
Laboratoire Officiel
Ministere de l'Agriculture et du Developpement Rural
25, Rue Nichakra Rahaf Casablanca
MOROCCO
Tel:+ 21222 302196
Fax: + 21222 301972
E-mail: loarc@casanet.net.ma

Mr. Najib Layachi
Processed Food Department Head Etablissement autonome de controle et de Coordination
Des Exportations
Casablanca
MOROCCO
Tel:+212 2244 2550
Fax: +212 2230 5168
E-mail: layachi@eacce.org.ma

Mr. Hammadi Chimi
Professeur Enseignant chercheur
Institute Agronomique and Veterinary Hassan II
Rabat
MOROCCO
Tel: +212 3768 2844
Fax: 212 3768 2844
E-mail: h.chimi@iav.ac.ma

NETHERLANDS

Mr. Joop W. Dornseiffen
Senior Policy Officer
Ministry of Health, Welfare and Sport,
Directorate Nutrition and Health Protection
P.O. Box 20350
2500 EJ The Hague
THE NETHERLANDS
Tel: +31.70.3406961
Fax: +31.70.3405554
E-mail: jw.dornseiffen@minvws.nl

Dhr. dr. R.M.C. Theelen
Ministry of Agriculture, Nature Management and Fisheries
P.O. Box 20401
2500 EK The Hague
THE NETHERLANDS
Tel: +31.70.3784091
Fax: +31.70.3786141
E-mail: HYPERLINK "mailto:r.m.c.theelen@vva.agro.nl" r.m.c.theelen@vva.agro.nl

Ms.Dr. Joyce M. de Stoppelaar
Senior Policy Officer
Ministry of Health, Welfare and Sport,
Directorate Nutrition and Health Protection
P.O. Box 20350
2500 EJ The Hague
THE NETHERLANDS
Tel: +31.70.340.6875
Fax: +31.70.340.5554
E-mail: jm.d.stoppelaar@minvws.nl

Mr. Gerrit M. Koornneef
Food Legislation Officer
General Commodity Board for Arable Products
P.O. Box 29739
2502 LS The Hague
THE NETHERLANDS
Tel: +31.70.3708323
Fax: +31.70.370.8444
E-mail: g.m.koornneef@hpa.agro.nl

Mr. Piet van Doorninck
Public Health Officer
Inspectorate for Health Protection
P.O. Box 16108
2500 BC The Hague
THE NETHERLANDS
Tel: +31.70.340.5070
Fax: +31.70.340.5435
E-mail: piet.van.doorninck@kvw.nl

Dr. David G. Kloet
Food Safety Advisor
RIKILT
P.O.Box 230
6700 AE Wageningen
THE NETHERLANDS
Tel: +31.317.475.562
Fax: +31.317.417.717
E-mail: david.kloet@war.nl

NEW ZEALAND

Mr. John van den Beuken
Advisor Standards
New Zealand Food Safety Authority
68 Jervois Quay
P.O.Box 2835
Wellington
NEW ZEALAND
Tel: +64 463 2581
Fax: + 64 463 2583
E-mail: john.vandenbeuken@nzfsa.govt.nz

NIGERIA

Mrs. Jane Nzeoma
Chief Regulatory Officer
Head of Unit
Codex Officer
National Agency for Food and Drug
Administration and Control Secretariat
Federal secr. Phase II Ikoyi-Lagos
NIGERIA
Tel:+01 2693104
Fax:+01 2693105
E-mail: janenzeoma@yahoo.com

Mr. L.I. Ezirim
Assistant Director Quality Control
Department of strategie Grais Reserve
Federal Ministry of Agriculture
P.O.Box 135
Abuja
NIGERIA
Tel:+09 2344827

Tijjani Sulejmaxi
Director
Planning Research and Statistics
Federal Ministr y of Agriculture and Rural Develpment
Area 11, Garki
Abuja
Tel:+09 3142747
Fax:+09 3140347

PHILIPPINES

Dr. Alicia O. Lustre
Director
National Food Authority, Food Development Center
FTI Complex Tagig M.M.
PHILIPPINES
Tel: +63.2.838.4715
Fax: +63.2.828.4692
E-mail: lustre@pacific.net.ph

Ms. Belinda S. San Diego
Senior Agriculturist, Officer in Charge of Prodct Testing Laboratory Section
Bureau of Fisheries and Aquatic Resoures
Arcadia blg Quezon Ave 860
Quezon Ave. Quezon City
PHILIPPINES
Tel: +37 250 45/59
Fax: +37 250 45
E-mail: bfarphtd@yahoo.com

POLAND

Dr. Barbara Szteke
Head Department of Food Analysis
Institute of Agricultural and Food Biotechnology
Rakowiecka 36
02-532 Warsaw
POLAND
Tel: +48.22.606.3837
Fax: +48.22.849.0428
E-mail: szteke@ibprs.pl

RWANDA

Mr. Charles Rutagengwa
Head Food Laboratory
Rwanda Bureau of Standards
P.O.box 7099 Kigali
RWANDA
Tel:+250 86103
E-mail: rutacha@yahoo.co.uk

SINGAPORE

Dr. Bosco Chen Bloodworth
Consultant Analytical Scientist
Centre for Analytical Science
Health Sciences Authority
11 Outram Road
169078 Singapore
SINGAPORE
Tel: +65 62130792
Fax: +65 62130749
E-mail: bosco_chen_bloodworth@hsa.gov.sg

SOUTH AFRICA

Mrs. Maryke Herbst
Principal Medical Natural Scientist
Directorate Food Control , Department of Health
Private Bag X828
0001 Pretoria
SOUTH AFRICA
Tel: +27.12.312.0164
Fax: +27.12.326.3162
E-mail: herbsm@health.gov.za

SUDAN

Mr. Alhasien A. Ahmad
Deputy Technical Manager
SSMO
13573 Khartoom
SUDAN
Tel: +249-11-77 5247
Fax: +249-11-774852
E-mail: ssmo@sudanmail.net

Dr. Ragaa El Hadi Omer El
Head of Mycotoxins Unit
Technical Administration of the Sudanese Standards and Metrology Organization (SSMO)
PO BOX 13573
Khartoum
SUDAN
Tel: 00 249 11 777480
Fax: 00 249 11 774852
E-mail: raga_omer@yahoo.co.uk

SWEDEN

Mr. Fredrik Alfer
Senior Administrative Officer
Ministry of Agriculture, Food and Fischeries
SE-103 33
Stockholm
SWEDEN
Tel: +46 8 405 11 39
Fax: +46 8 20 64 96
E-mail: fredrik.alfer@agriculture.ministry.se

SWITZERLAND

Mrs. Awilo Ochieng Pernet
Codex Alimentarius, International Standards Unit
Swiss Federal Office of Public Health
CH-3003 Bern
SWITZERLAND
Tel: +41.31.322.0041
Fax: +41.31.322.9574
E-mail: awilo.ochieng@bag.admin.ch

Mr. Matthias Hoppler
Regulatory Affairs
Roche Vitamins Ltd.
Bldg. 241/812
CH-4070 Basel
SWITZERLAND
Tel: +41 61 687 26 52
Fax: +41 61 688 15 35
E-mail: matthia.hoppler@roche.com

Dr. Carolyn Meduski
Regulatory Affairs
Nestec Ltd.
Avenue Nestle 55
CH-1800 Vevey
SWITZERLAND
Tel: +41.21.924.3982
Fax: +41.21.924.4547
E-mail: carolyn-judith.meduski@nestle.com

Dr. Hervé J. Nordmann
Director Scientific and Regulatory Affairs
Ajinomoto Switzerland AG
En Crochet 1
CH-1143, Apples
SWITZERLAND
Tel: +41.21.8003763
Fax: +41.21.8004087
E-mail: herve.nordmann@asg.ajinomoto.com

TANZANIA

Prof. N. B. Shayo
Associate Professor,
Sokoine University of Agriculture
P.O.Box 3006
Morogoro
Tanzania
Tel:+255 232604402
Fax :+255 232604402
E-mail nbshayo@yahoo.co.uk

Dr. Godwin D. Ndossi
Director Food Science and Nutrition
Tanzania Food and Nutrition Centre
Box 977
Dar-es-salaam
TANZANIA
Tel: 255 22 2780378
Fax: 255 22 2116713
E-mail: gndossi2@yahoo.co.uk

Mr. O.N. Msaki
Technical advisor, Africa Codex Project
Centre for Counselling, Nutrition and Health Care
P.O.Box 8218
TANZANIA
Tel: +255222152705
Fax: +255222152705
E-mail: obadiah@ud.co.tz

Mr. Pancras Babu
Technical Manager
P.O.Box 7813
Dar es Salaam
TANZANIA
Tel: +255 222700 700
Fax:+ 255 222 700 708
E-mail: pbabi@ccsabco.co.za

Mrs. Theresia Hubert
Principal Standards Officer
Tanzania Bureau of Standards
P.O. Box 9524
Dar es Salaam
TANZANIA
Tel: +255 222 450 206
Fax:+255 222 45959
E-mail: siangicha2001@yahoo.co.uk

APPENDIX I

Mr. Callington Kayuni
General Manager
Tanzania Distilleries
P.O. box 9412
Dar es Salaam
TANZANIA
Tel: +2864374
Fax: +2865202
E-mail: ck@tdi.co.tz

Ms. Nadhifa S. Kemikimba
Senior Officer
Water Laboratories Unit
Ministry of Water and Livestock Development
P.O.Box 35066
Dar es Salaam
TANZANIA
Tel: +2550222450047
Fax: +2550222451447
E-mail: dwr-maji@intafrica.com

Mr. Leonard Kinabo
Head Process Technology Standards Department,
Tanzania Bureau of Standards
P.O. Box 9524
Dar es Salaam
TANZANIA
Tel: +255 2458209
E-mail: lkinabo@yhotmail.com

Mrs. Agnes B. Lukyaa
Senior Planning and Development Officer
Sugar Board
P.O. Box 4355
Dar Es Salaam
TANZANIA
Tel: +255 2111523
Fax: +255 2130598
E-mail: agnslky@yahoo.co.uk

Mr. J.D. Makisi
Head, Food Manufacturing & Licensing
National Food Control Commision, Ministry of Health
P.O.Box 7601
Dar es Salaam
TANZANIA
Tel: +255 222114039
Fax: +255 222113320
E-mail: jmakisi@yahoo.com

Mr. O.M. Soli
RegistrarNational Food Control Commission
P.O.Box 7601
Dar es Salaam
TANZANIA
Tel: +255 22211 4039
Fax: + 255 222 113320
E-mail: moh@cats-net.com

Mr. R.N. Wigenge
Head, Food Import and export section
National Food Control Commission, Ministry of Health
P.O.Box 7601
Dar es Salaam
TANZANIA
Tel: +255 222 11 4039
Fax: +255 22139951
E-mail: raywigenge@hotmail.com

Dr. Wilbald Lorri
Managing Director, Tanzanian Food and Nutrition Centre
P.O. Box 977
Dar -Es- Salaam
TANZANIA
Tel: +255 222118138
Fax: +255 222116713
E-mail: wlorri@muchs.ac.tz

Mr. Hussein M. Khatib
TBS Liaison Officer
P.O.Box 601
Zanzibar
TANZANIA
Tel:024 2231870
Fax: 0242231870
E-mail: industries@zanlink.com

Mr. Mattar Mkuu
Food Scientist
Zanzibar Government Central Laboratory
P.O. Box 759
Zanzibar
TANZANIA
Tel: 255 24 2231620
Fax: 255 24 2233981
E-mail: mattarmkuu@yahoo.com

APPENDIX I

Mrs B. Mamuya
Head, Food and Drug Division, Government
Chemist Laboratory Agency
P. O. Box 164,
Dar es Salaam
TANZANIA
Tel:+255 22 2113383
Fax:+255 22 2113320
E-mail bmamuya@gcla.go.tz

Mr Mziray R.
Head, Food Section, Government Chemist
Laboratory Agency
P. O. Box 164,
Dar es Salaam
TANZANIA
Tel :+255 2113383
Fax :+255 2113320
E-mail : rmziray@gcla.go.tz

Dr. R.A.Mohamed
Head, Phytisauritary a plant Quarantrul Services
Ministry of Agriculture and Food Security
P. O. Box 9071, Dar es Salaam
TANZANIA
Tel :+255 22 2865642/3
Fax :+255 22 2865641
E-mail: roseane@kilimo.go.tz

Capt. T. Kasapira
Board Member, Tanzania Bureau of Standards
P. O. Box 9133, Mahenge,
Morogoro
TANZANIA
Tel:+0744 177708

Dr. (Mrs.) Monica E. Lyimo
Senior Lecturer,
Sokoine University of Agriculture
Box 3006,
Morocuro
Tanzania
Tel:+255 232604402
Fax +255 232604402
E-mail Monilyimo@yahoo.com

Mr. Abuu Juma H.
Nutritionist
Ministry of Health
P.O.Box 236
Zanzibar
TANZANIA
Tel: +0747-422660

Mr. Joseph Ondeng
Secretary General
Oemels Butuvi Development Centre
P.O. Box 340,
Tarime
TANZANIA

Mr. H.G. Mbilinyi
Zonal Officer in charge
Lake Victoria Zone
Fish Quality Control and Standards
Ministry of Natural
Resource and Toerism
P.O. Box 1213
MWANZA
TANZANIA
Tel:+255 282550025
Fax:+255 282500864
E-mail:gonzah@eudor.mail.com

Dr. J.O. Mollel
Assisant Director Vet. Public Health
Ministry of Water and Livestock
Development
P.O.Box 9152
Dar es Salaam
TANZANIA
Tel: +255 222864306
E-mail:dlv@raha.com

Mr. D.J. Mwakyembe
Director
Tanzania Bureau of Standards
P.O.Box 9524
Dar Es Salaam
TANZANIA
Tel:+255 2450298
Fax:+255 2450959
E-mail:standards@avu.org

Dr. Claude J.S. Mosha
Chief Standards Officer
Tanzania Bureau of Standards
P.O. Box 9524
Dar es Salaam
TANZANIA
Tel: +255 2450298
Fax: +255 2450959
E-mail: cjsmosha@yahoo.cp.uk

Mr. O. Okello Alex
Chairman
Continental Farmers Association
P.O.Box 340
Tarime
TANZANIA

Mrs. Mofato Shomari
Ass. Coordinator Food and Nutriction
P.O. Box 1009
Arusha
TANZANIA
Tel:+255 272504105
Fax:+255 272504124
E-mail: mshomari@cths.os.tz

Mrs. Salma M. Ebrahim
Director for Trade
Ministry of Trade Industry and Market and Tourism
601 Zanzibar
TANZANIA
Tel:+255 747 422591
Fax:+024 2231517
E-mail:mtimt@zanlink.com

THAILAND

Dr. Songsak SriAnujata
Director
Mahidol University Institute of Nutrition Salaya Putthamonthon
73170 Nakhornpathom
THAILAND
Tel: +662 441 9740
Fax: +662 441 9344
E-mail: HYPERLINK "mailto:rassn@amahidol.ac.th" rassn@amahidol.ac.th / directnu@mahidol.ac.th

Mrs. Oratai Silapanapaporn
Assistant Director
Office of Commodity and System Standards
Ministry of Agriculture and Cooperatives
Rajadamnern Nok Avenue
10200 Bangkok
THAILAND
Tel: +662-280-3905
Fax: +662-280-1542
E-mail: roratais@amahidol.ac.th

Ms. Pranee Boonyaguakul
Home Ecomist
Office of Commodity and System Standards
Ministry of Agriculture and Cooperatives
Rajadamnern Nok Aveau
Bangkok 10200
THAILAND
Tel: +66 2280 3905
Fax: +66 2280 1542
E-mail: paneeboon@hotmail.com

TURKEY

Mr Murat Yazici
Foreign Trade Expert
Under Secretariat of Foreign Trade
8th Floor, 06510 –
Emek/ Ankara
TURKEY
Tel.: +90 312 2128800/1345
Fax.: +90 312 2128246
Email.:yazicim@foreigntrade.gov.tr

Mrs. Prof.dr. Uygun Aksoy
Ege University Facility of Agriculture
Dept of Horticulture
Izmir
TURKEY
Tel: +90 232 3881865
Fax: +90 232 3881865
E-mail: aksoy@ziraat .ege. edu.tr

UGANDA

Dr.William M. Ssal
Director
Food Science & Technology Research Institute (FOSRI)
P. O. Box 7852, Kampala
UGANDA
Tel: 256-41-566844
Fax: 256-41-566849
Email: fosri@imul.com

Dr. Benon Kyokwijuka
Principal Veterinary Officer
Ministry of Agriculture Animal, Industry and Fisheries
P. O. Box 102
Entebbe
UGANDA
Tel: 256-41-320825/ 320376
Mob. 077586710
Fax: 256-41-320428
Email: kyokwijukabenon@hotmail.com

Mr. Geoffrey Onen
Senior Government Analyst
Government Chemist and Analytical Laboratory
P. O. Box 2174, Kampala
UGANDA
Tel: 256-41-250464/470
Mob. 071-832871
Fax: 256-41-250474
Email: onengff@hotmail.com

Mr. Robert Walimbwa
Regulatory Services Manager
Dairy Development Authority (DDA)
P. O. Box 34006, Kampala
UGANDA
Tel: 256-41-343901, 343902
Mob: 077448562
Fax: 256-41-250270
Email: dda@afsat.com

Dr. Agaba E. Friday
Principal Environmental/Medical Officer
P.O. Box 7272, Kampala
UGANDA
Tel: 256-41-231563
Mob: 077691236
Emial: agabafriday@hotmail.com

Dr. T. Kahuma
Executive Director
Uganda National Bureau of Standards
P.O.Box 6329
Kampala
UGANDA
Tel: +256 41 286123
Fax: +256 41 286123
E-mail: unbs@afsat.com

Ms. Stella Apolot
Standards Officer
Uganda National Bureau of Standards
P. O. Box 6329, Kampala
UGANDA
Tel: 256-41-222367
Fax: 256-41 286123
Email: stella.apolt@unbs.org

Abdel R. Kaahwa
Excutive director
Ugenda industrian (UIRI)
Research Institute
P.O.Box 7086
Campala
UGENDA
E-mail : uiri@utlonline.co.ug

UNITED ARAB EMIRATES

Mr. Waheed AbdyRahim A. Hassan
Chemical Analyst
Food Control and Env. Lab.
7463
Municipalty Dubai
UNITED ARAB EMIRATES
Tel: 00971 4 3011618
Fax: 00971 4 3358448

Ms. Manal Abdelmuhsin Shuhail
Senior Chemical Analyst
Ministry if Public Health and Environmental Affairs / Central Food Control & Consultancy Lab.
Municipality
Postbus 22, Sharjah
UNITED ARAB EMIRATES
Tel: 00971 6 5650017
Fax: 00971 65650612
E-mail: scai@vas.us

UNITED KINGDOM

Dr. Wendy Matthews
Head of Mycotoxins and Process Contaminants
Food Standards Agency
125, Kingway
London WC2B6NH
UNITED KINGDOM
Tel: +44.20 7276 8707
Fax: +44.20 7276 8717
E-mail:
wendy.matthews@foodstandards.gsi.gov.uk

Mr. Andy Crimes
Regulatory Affairs Manager
Contaminants, Regulatory Affairs Foods,
Unilever R&D Corworth
Sharnbrook,
Bedford MK44 1LQ
UNITED KINGDOM
Tel: +44 1234.222328
Fax: +44 1234.22539
E-mail: andy.crimes@unilever.com

Dr. Brian Whitehouse
Consultant
6 Church Bank, Richmond Road
Bowdon, Cheshire WA14 3NW1
UNITED KINGDOM
Tel: +44.161.928.6681
Fax: +44.1619 29 8544
E-mail: brian@churchbank.demon.co.uk

Dr. Rhodri Evans
Head of Food Additives Branch
Food Standards Agency
Aviation House 125 Kingsway
WC2B 6 NH London
UNITED KINGDOM
Tel: 44 20 7276 8508
Fax: 44 20 7276 8514
E-mail: rhodri.evans@foodstandards.gsi.gov.uk

INTERNATIONAL ORGANISATIONS
ORGANISATIONS INTERNATIONNALES
ORGANIZACIONES INTERNATIONALES

CEFS (Comité Européen des Fabricants de Sucre)

Dr. Nathalie Henin
Scientific Counselor
182 Av.De Tervuren
1150 Brussels
BELGIUM
Tel: +32.2.762.0760
Fax: +32.2.771.0026
E-mail: nathalie.henin@cefs.org

COUNCIL OF EUROPEAN UNION

Dr. Philip Landon
Administrator
Council of Ministers of the EU
Rue de la Loi 175
B-1048 Brussels
BELGIUM
Tel: 00 322 235 4966
Fax: 00 3232 385 6198
E-mail: philip.landon@consiljum.eu.in

EFLA (European Food Law Association)

Mr. Mikael Conny Svensson
Member
50 Rue de l'Association
B-1000 Brussels
BELGIUM
Tel: +32 2 2181470
Fax: +32 2 219 7342
E-mail: eflabelgium@eas.be

EUROPEAN COMMISSION

Mr. Frans Verstraete
Health and Consumer Protection Directorate-General
Rue de la Loi 200
B-1049 Brussels
BELGIUM
Tel: +32.2.295.6359
Fax: +32.2.29.91856
E-mail: frans.verstraete@cec.eu.int

Ms. Katja Neubauer
Health and Consumer Protection Directorate-General
Rue de la Loi 232
B-1049 Brussels
BELGIUM
Tel: +32.2.293.33.46
Fax: +32.2.299.18.56
E-mail: katja.neubauer@cec.eu.int

Mr. Dr. Georg Schreiber
Health and Consumer Protection Directorate-General
Rue de la Loi 200
B-1049 Brussels
BELGIUM
Tel: +32.2.295.6540
Fax: +32.3.299 1856
E-mail: georg.schreiber@cec.eu.int

Mr. Martin Slayne
Health and Consumer Protection Directorate-General
Rue de la Loi 200
B-1049 Brussels
BELGIUM
Tel: +32.2.295.6329
Fax: +32.2.299.1856
E-mail: martin.slayne@cec.eu.int

FEFAC (Euopean Feed Manufactures Federation)

Mr. Alexander Döring
Secretary General
Rue de la Loi 223
1040 Brussels
BELGIUM
Tel: +32.2.285.0050
Fax: +32.2.230.5722
E-mail: fefac@fefac.org

Dr. Reinder Sijtsma
Scientific and Legal Affairs
Reu De la Loi 223 Box 3
B-1040 Brussels
BELGIUM
Tel: +32.2.285.00.50
Fax: +32.2.230.57.22
E-mail: reinder.sijtsma@nutreco.com

IADSA (International Alliance of Dietary/Food Supplement Associations)

Mr. Peter Berry Ottaway
Technical Advisor
1A Fields Yard, Plough lane
Hereford HRI ITS
UNITED KINGDOM
Tel:+44 1432 270886
Fax: +44 1432 270808
E-mail:berry.ottaway@dail.pipex.com

IAEA (International Atomic Energy Agency

Dr. Mikhail Balonov
Unit Head
Wagramerstrasse 5
1400 Vienna
AUSTIA
Tel: 43 1 2600 22854
Fax: 43 26007
E-mail: m.balonov@iaea

Dr. Paul Thomas
Consultant
Wagramerstrasse 5
A-1400 Vienna
AUSTRIA
Tel:+ 43 2600 21643
Fax: + 43-26007
E-mail : P.Thomas@iaea.org

IDF (International Dairy Federation)

Dr. C.A.L. Bercht
Head of the IDF Secretary for Legislative, Environmental and Farm Affairs
Dutch Dairy Association (NZO)
P.O.Box 165
2700 AD ZOETERMEER
NETHERLANDS
Tel: +31 79 34 30 302
Fax: +31 79 34 30 320
E-mail: bercht@nzo.nl

IFCGA (International Federation of Chewing Gum Associations)

Mr. Jean Savigny
Counsel
Keller and Heckman
Rue Blanche 25
B-1060 Brussels
BELGIUM
Tel: +32.2.541.0570
Fax: +32.2.541.0580
E-mail: savigny@khlaw.be

IFU (International Federation of Fruit Juice Producers)

Mr. Paul Zwiker
Delegate to CCFAC
International Federation of Fruit Juice producers
P.O.Box 45
CH-9220 Bischofszell
SWITZERLAND
Tel: +41.71.4200.644
Fax: +41.71.4200.643
E-mail: zwiker@bluewin.ch

IHPC (International Life Sciences Institute)

Mr Ben Wilson
President
W. Raymondstreet 5600
41021 Indianapolis
UNITED STATES OF AMERICA
Tel: 001.317.240.1412
Fax: 001.317.240.1501
E-mail: ben.wilson@sensient-tech.co,

INC (Int'l Treenut Council)

Mrs. Julie Adams
Director, Intl. Programs Technical Affairs
C/o ABC 1150 9th Street, suite 1500
Modesto CA 95354
UNITED STATES OF AMERICA
Tel: + 1-209 3433238
Fax:+ 1-209 549 8267
E-mail: HYPERLINK "mailto:jadams@almondboard.com" jadams@almondboard.com

INEC + EFEMA

Mrs. Jette Thestrup
Regulatory Adviser
Danisco
Edwin Rahrs Vej 38
DK-8220 Brabrand
DENMARK
Tel: +45.89.43.5123
Fax: +45.89.435129
E-mail : jette.thestrup@danisco.com

ISC (International Society of Citriculture)

Mrs. Dr. Gabriele Ludwig
512 C St. NE
Washington D.C. 20002
UNITED STATES OF AMERICA
Tel:+ 202 543-4455
Fax:+ 202-543-4586

ISDI (International Special Dietary Foods Industries)

Ms. Alice Gravereaux
Scientific and Regulatory Affairs
194 Rue de Rivoli
75001 Paris
FRANCE
Tel: +33 01 53 45 87 87
Fax: +33 01 53 45 8780
E-mail: alice.gravereaux@wanadoo.fr

IUFOST (International Union of Food science and Technology)

Prof. John Lupien
Maplegrove Road 511
L6j 6x0 Oakville, Ontario,
CANADA
Tel: +1 905 815 196
Fax: +1 905 815 1926
E-mail: iufost@ca.inter.net

NATCOL (Natural Food Colours Association)

Mrs. Anne Kristine McNair
Regulatory Consultant
CHR Hansen
Boege Alle 10-12
2970 Horsholm
DENMARK
Tel: 004545748523
Fax: 004545748966
E-mail: HYPERLINK "mailto:annekristine.mcnair@dk.chr-hansen.com" annekristine.mcnair@dk.chr-hansen.com

OFCA (Organisation des fabricants de produits cellulosique alimentaires)

Dr. Evert Izeboud
Secretary
Kerkweide 27
2265 DM Leidschendam
NETHERLANDS
Tel: +31 70 320 9894
Fax: +31 70 320 3759
E-mail: eizeboud@worldonline.nl

Mr. Rodney J.H. Gray
Director Regulatory Affairs
Hercules Incorporated Research Center
Hercules Road 500
19808 Wilmington Deleware
UNITED STATES OF AMERICA
Tel: +1.302.995.3402
Fax: +1.302.995.3400
E-mail: rgray@here.com

FAO (Food and Agriculture Organization of the UN)

Dr. Manfred Luetzow
Food Quality and Standards Service
Food and Nutrition Division, Food and Agriculture Organization of the United Nations
Viale delle Terme di Caracalla
00100 Rome
ITALY
Tel:+0039.06.570 55425
Fax:+0039.06.570 54593
E-mail: manfred.luetzow@fao.org

Joint FAO/WHO Codex Secr.

Mr. David Byron
Food Standards Officer
Viale delle Terme di Caracalla
00100 Rome
ITALY
Tel:+39.6.5705.4419
Fax:+39.6.5705.4593
E-mail:david.byron@fao.org

Ms. Gracia Brisco
Food Standards Officer
Joint FAO/WHO Food Standards Programme
FAO
Viale delle Terme di Caracalla
00100 Rome
Tel: +3906. 5705.27000
Fax: +3906. 5705.4593
e-mail: gracia.brisco@fao.org

Dr. Seoung Yong Lee
Associate Professional Officer
Joint FAO/WHO Food Standards Programme
Viale delle terme di Caracalla
00100 Rome
ITALY
Tel: +39.06.5705.6234
Fax: +39.06.5705.4594
e-mail: seoungyong.lee@fao.org

WHO (World Health Organization)

Dr. Gerald G. Moy
Food Safety Department
WHO
20 Avenue Appia
CH-1211 Geneva 27
Switzerland
Tel: + 41 22 791 3698
Fax: +41 22 791 4807
E-mail: moyg@who.int

Dr. C. Atsyor
Programme Officer
P.O.Box 9292
Dar es Salaam
TANZANIA
Tel: 255 22 2111718
Fax: 255 22 2113180
E-mail: atsyor@who.or.tz

W. Mntenga
Programme Officer
P.O.Box 9292
Dar es Salaam
TANZANIA
Tel: 255 22 2111718
Fax: 255 22 2113180
E-mail: mntenga@who.or.tz

HOST GOVERNMENT COMMITTEE SECRETARIAT

Ms. Nathalie Scheidegger
HEAD TECHNICAL SECRETARIAT
Ministry of Agriculture, Nature Management and Fisheries
P.O. Box 20401
2500 EK The Hague
NETHERLANDS
Tel: +31.70.3784479
Fax:+31.70.3786141
E-mail:n.m.i.scheidegger@vva.Agro.nl

Mrs Leoniek Robroch
Royal Numico
Coprorate Affairs
PO BOX 1
2700 MA ZOETREMEER
NETHERLANDS
Tel. +31.79.353.9018
Fax: +31.79.353.9050
Email: leoniek.robroch@numico.com

APPENDIX I

Codex Contact Point The Netherlands

Ms. Elfriede E.E. Adriaansz
Codex Contact Point
Ministry of Agriculture,
Nature Management and Fisheries
PO BOX 20401
2500 EK The Hague
NETHERLANDS
Tel: + 31 70 378 4104
Fax:+ 31 70 378 6141
e-mail:E.E.E.Adriaansz@vva.agro.

Secretariat

Mrs. Sharida Sardar
Ministry of Agriculture, Nature management and Fisheries
Bezuidenhoutseweg 73
2500 EK The Hague
NETHERLANDS
Tel: +31.70.378.4426
Fax:+31.70.378.6141
e-mail:S.Sardar@vva.agro.nl

APPENDIX II

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

(AT STEP 5 OF THE PROCEDURE)

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 (plain)
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 (plain)
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 (plain)
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

APPENDIX II

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

3.0 Edible ices, including sherbet and sorbet

04.0 Fruits and vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes**[(including soybeans)]**, 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, marmalades
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, incl. 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 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

04.2.2.8 Cooked vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes and aloe vera), and seaweeds
[04.3 Soybean products (non-fermented)
04.3.1. Fresh bean curd (tofu)
04.3.2. Semi-dehydrated bean curd
04.3.2.1. Thick gravy-stewed semi-dehydrated bean curd
04.3.2.2 Deep fried semi-dehydrated bean curd
04.3.2.3. Semi-dehydrated bean curd, other than food categories 04.3.2.1 and 04.3.2.2.**]**

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, incl. 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
05.3 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)
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]

07.0 Bakery wares
07.1 Bread and ordinary bakery wares and mixes
07.1.1 Breads and rolls
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

APPENDIX II

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)

APPENDIX II

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 soy protein products) and fermented soybean products
12.1	Salt
12.2	Herbs, spices, seasonings (including salt substitutes), and condiments (e.g., seasoning for instant noodles)
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
[12.10	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
12.11	Soy protein products
12.11.1	Soybean milk
12.11.2	Soybean milk film
12.11.3	Other soybean protein products (including non-fermented soy sauce)**]**
13.0	Foodstuffs intended for particular nutritional uses
13.1	Infant formulae and follow-up formulae
13.1.1	Infant formulae
13.1.2	Follow-up formulae
13.2	Complementary foods for infants and young children
13.3	Dietetic foods intended for special medical purposes **[**including those for infants and young children**]**
[13.3.1	Dietetic foods for special medical purposes intended for adults**]**
[13.3.2	Dietetic foods for special medical purposes intended for infants and young children**]**
13.4	Dietetic formulae for slimming purposes and weight reduction

APPENDIX II

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	Canned or bottled (pasteurized) fruit juice
14.1.2.2	Canned or bottled (pasteurized) vegetable juice
14.1.2.3	Concentrates (liquid or solid) for fruit juice
14.1.2.4	Concentrates (liquid or solid) for vegetable juice
14.1.3	Fruit and vegetable nectars
14.1.3.1	Canned or bottled (pasteurized) fruit nectar
14.1.3.2	Canned or bottled (pasteurized) vegetable nectar
14.1.3.3	Concentrates (liquid or solid) for fruit nectar
14.1.3.4	Concentrates (liquid or solid) 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 categories 01 - 15.

APPENDIX II

Proposed Draft Revised Food Category Descriptors

01.0 DAIRY PRODUCTS AND ANALOGUES, EXCLUDING PRODUCTS OF FOOD CATEGORY 2.0:

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, COCOA, 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, 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 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]

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

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

---

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.

01.2.2 RENNETED MILK (PLAIN):

Plain, coagulated milk produced by the action of the enzyme rennin. Includes curdled milk. Flavoured renneted milk products are found in 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.

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 (PLAIN):

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.

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 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 enzymatic action. Includes sour cream (cream subjected to lactic acid fermentation achieved as described for buttermilk (01.1.1.2)).[7]

01.4.4 CREAM ANALOGUES (PLAIN):

Cream substitute consisting of a vegetable fat-water emulsion in liquid or powdered form for use other than as a beverage whitener (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, cream powders, or combination of the two, and their analogues. Includes products based on skim, part-skim, low-fat and whole milk.

---

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.

01.5.1 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] Casein and caseinates.

01.5.2 MILK AND CREAM POWDER ANALOGUES (PLAIN):

Products based on a fat-water emulsion and dried for use other than as a beverage whitener (01.3.2). Products may be aromatized. Examples include imitation dry cream mix.

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 (12.6.2), cheese-flavoured snacks (15.1), and composite prepared foods containing cheese as an ingredient (e.g., macaroni and cheese; 16.0) are categorized elsewhere.

01.6.1 UNRIPENED CHEESE:

Unripened cheese, including fresh cheese, is ready for consumption soon after manufacture.[9] Examples include cottage cheese (a soft, unripened, coagulated curd cheese), creamed cottage cheese (cottage cheese covered with a creaming mixture),[10] cream cheese (rahmfrischkase, an uncured, soft spreadable cheese),[11] 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.[9] 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.[12]

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.

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.[13]

---

8 Codex Standard for Milk Powder and Cream Powder (CXSN 207-1999).

9 Codex Standard for Cheese (CXSN A-06-1999 Rev. 1 Amended 2001).

10 Codex Standard for Cottage Cheese and Creamed Cottage Cheese (CXSN C-16-1968).

11 Codex Standard for Cream Cheese (Rahnfrischkase) (CXSN C-31-1973).

12 Codex Standard for Cheese in Brine (CXSN 208-1999 Amended 2001).

13 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.

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 (01.6.2.1 for variety cheese; 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.[14] Includes the whole cheese and the rind of the cheese. Different from whey protein cheese (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.[15] 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.

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 (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.[16] 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), butterscotch pudding and chocolate mousse. Includes traditional milk-based sweets prepared from khoa (cow or buffalo milk concentrated by boiling), 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 category 01.7 are dairy-based, while those in 03.0 are water-based and contain no dairy ingredients.

---

[14] Codex Standard for Whey Cheese (CXSN A-07-1999 Rev. 1).

[15] *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).

[16] Codex Standard for Flavoured Yoghurt and Products Heat-Treated After Fermentation (CXSN A-11b-1976).

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 rennet-like 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.[17]

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.[17]

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.[18]

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 nonfat solids. Ghee is a product obtained exclusively from milk, cream or butter by a process that almost completely removes water and nonfat solids; it has a specially developed flavour and physical structure.[19]

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.[20] 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.[18, 21] 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 odor 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.[22, 23] Other examples include: tallow and partially defatted beef or pork fatty tissue.

---

17 Codex Standard for Whey Powder (CXSN A-15-1995)

18 Codex General Standard for Edible Fats and Oils Not Covered by Individual Standards (CXSN 019-1999).

19 Codex Standard for Milkfat Products (CXSN A-02-1999 Rev. 1).

20 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 472-476.

21 Codex Standard for Olive Oil (CXSN 033-1989 Rev. 1); and Codex Standard for Named Vegetable Oils (CXSN 210-1999 Amended 2001).

22 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 472-476.

23 Codex Standard for Named Animal Fats (CXSN 211-1999).

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 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.[24]

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.[25]

02.2.1.3 Blends of butter and margarine:

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

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).[26] Includes minarine, a spreadable water-in-oil emulsion produced principally from water and edible fats and oils that are not solely derived from milk.[27] 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));[3] 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 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 **[(INCLUDING SOYBEANS)],** 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 (04.1.1) and processed (04.1.2) products.

---

24 Codex Standard for Butter (CXSN A-01-1999 Rev. 1).

25 Codex Standard for Margarine (CXSN 032- 1989 Rev. 1).

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

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

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.

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.

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.[28] Examples include frozen fruit salad and frozen strawberries.

04.1.2.2 Dried fruit:

Fruit from which water is removed to prevent microbial growth.[28] Includes dried fruit leathers (fruit rolls) prepared by drying fruit purees. Examples include dried apple slices, raisins, 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.[29] These are not the candied fruit products of 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.[28] Includes products processed in retort pouches. Examples include: canned fruit salad, and applesauce in jars.

04.1.2.5 Jams, jellies, marmalades:

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. Marmalade 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.[28, 30] Includes dietetic counterparts made with non-nutritive high-intensity sweeteners. Examples include: orange marmalade, 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.

---

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

29 *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.

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

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).[28] Examples include: cocktail (maraschino) cherries, candied citrus peel, candied citrons (e.g., used in holiday fruitcakes), and mostarda di frutta.

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 which 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.[28] Non-fruit toppings are included in category 05.4 (sugar- and chocolate-based toppings) and sugar syrups (e.g., maple syrup) are included in 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.[31] 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, incl. 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 (categories 07.2.1 and 07.2.2), fruit-flavoured edible ices (category 03.0), or fruit-containing frozen dairy desserts (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 (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 (04.2.1) and processed (04.2.2) products.

---

[31] Proposed Codex Draft Standard for Aqueous Coconut Products (Step 5), ALINORM 00/15, Appendix II. These products are also described in Appendix II of this document

APPENDIX II

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.

04.2.1.1 Untreated fresh vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes 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.[32] 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.[32] 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. Fermented vegetables, which are a type of pickled product, are classified in 04.2.2.7. 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.

---

[32] *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.[32] 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 category 04.2.2.6).[32, 33] 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 (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), fresh tofu, soybean milk film, 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:

Fermented vegetables are a type of pickled product, formed by the action of lactic acid bacteria, usually in the presence of salt.[32] 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.[34] Examples include: red pepper paste, fermented vegetable products (some tsukemono other than category 04.2.2.3), fermented soybeans (natto), kimchi (fermented Chinese cabbage and vegetable preparation), and sauerkraut (fermented cabbage)

04.2.2.8 Cooked 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).

[04.3 Soybean products (non-fermented)

04.3.1 Fresh bean curd (tofu)

04.3.2 Semi-dehydrated bean curd

04.3.2.1 Thick gravy-stewed semi-dehydrated bean curd

04.3.2.2 Deep fried semi-dehydrated bean curd

04.3.2.3 Semi-dehydrated bean curd, other than food categories 04.3.2.1 and 04.3.2.2**]**

---

[33] Codex Standard for Processed Tomato Concentrates (CXSN 057-1981).

[34] *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.

APPENDIX II

05.0 CONFECTIONERY:

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

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 flavour. 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 moulding 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.[35, 36] 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 category 01.1.2, and most finished chocolate products are included in 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.[36] Chocolate syrup differs from fudge sauce (e.g., for ice cream sundaes), which is found in category 05.4.

05.1.3 COCOA-BASED SPREADS, INCLUDES 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,[37] 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 flavouring substances, and optional ingredients (e.g., nuts).[36, 38] Includes chocolate-covered nuts and fruit (e.g., raisins), but does not include yoghurt, cereal, and honey-covered nuts (category 15.2). Examples include: bonbons, cocoa butter confectionery (composed of cocoa butter, milk solids and sugar),[39] 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 categories 07.2.1 and 07.2.2), and composite chocolate (chocolate with added edible substances excluding flour starch and fat, unless expressly permitted).[40]

---

35 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).

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

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

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

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

40 Codex Standard for Composite and Filled Chocolate (CXSN 142-1983).

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.

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 non-nutritive high-intensity sweeteners. Examples include: licorice; hard candy (made from water and sugar (simple syrup), colour and flavour); caramels (contain 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); pastilles and lozenges (rolled, shaped and filled sugar-based candy); nougats (roasted ground nuts, sugar, cocoa; also may be used as a filler for chocolate products); and marzipan (almond paste and sugar). These products may be dipped in chocolate or sugar coatings;[41] these coatings are included in category 05.4. Also included are Oriental specialties, such as sweet bean jelly (yokan) and agar jelly for mitsumame.

05.3 Chewing gum:

Product made from natural or synthetic gum base containing flavours, sweeteners (nutritive or non-nutritive), aroma compounds, and other additives.[41] 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 category 11.4. Fruit-based toppings are included in 04.1.2.8. Chocolate sauce is included in 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 (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).

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, category 07.2.3). 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 different part of 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-a-D-glucose units. Native starch is separated by processes that are specific for each raw material.

---

41 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 634-636.

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):

The 34th CCFAC revised this food category as follows, with the understanding that there would be few, if any additives needed in dried pastas and noodles.[42]

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).

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 07.1.4, and other mixes (e.g., for bread or cakes) are found in 07.2.3.

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).[43] Crisp snacks made from rice grains, also called "rice cakes" are categorized in 15.1, and dessert-type rice cakes are in 06.5. 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 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]:

This category includes soybean curd (tofu), either fermented or non-fermented, other fermented soybean products (e.g., miso), soybean milk, soybean milk film and soybean milk cheese.

---

42 ALINORM 03/12, para. 55.

43 *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.

APPENDIX II

07.0 BAKERY WARES:

Includes categories for bread and ordinary bakery wares (07.1) and for sweet, salty and savoury fine bakery wares (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 breads, and specialty breads. Examples include: white bread, rye bread, pumpernickel bread, raisin bread, whole wheat bread, pain courant francais, malt bread, hamburger rolls, whole wheat rolls, milk rolls, and soda bread.

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 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 category 07.2.1.

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 category 07.2.3.

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.[44] 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 categories 07.1.1 to 07.1.5. Examples include: French bread mix, tin bread mix, pannetone mix, ciabatta mix among others.

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

Includes sub-categories for ready-to-eat products (07.2.1 and 07.2.2) as well as mixes (07.2.3) for preparing 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.

---

[44] *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.

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 a dough for baked goods. Examples include: bread mix, cake mix, flour confectionery mix, pancake mix, pie mix, and waffle mix. Prepared dough is found in category 07.1.4.

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 (08.1) and processed (08.2 and 08.3).

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 (08.2.1) and heat-treated meat cuts (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 such as sodium nitrate and/or sodium nitrite. Smoked products are also included here.[45] 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 category 08.2.1.1, and then dried, or they may only be dried. Drying is achieved either in hot air or in vacuum.[45] Examples include: dried salt pork, dehydrated meat, and proscuitto-type ham.

---

[45] *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 439-445.

APPENDIX II

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.

08.2.2 HEAT-TREATED PROCESSED 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 PIECES 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 (08.3.1) and heat-treated products (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 such as sodium nitrate and/or sodium nitrite. Also includes smoked products.[45] 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 category 08.3.1.1, and then dried, or they may only be dried. Drying is achieved either in hot air or in vacuum.[45] 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.[45]

09.0 FISH AND FISH PRODUCTS, INCLUDING MOLLUSKS, CRUSTACEANS, AND ECHINODERMS:

This broad category is divided into categories for fresh fish (09.1) and various processed fish products (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.[46]

091.1. FRESH FISH:

Includes fresh whale meat, cod, salmon, trout, etc.; and fresh fish roe.

09.1.2 FRESH MOLLUSKS, 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 MOLLUSKS, CRUSATCEANS, AND ECHINODERMS:

Fresh, including partially cooked, fish subjected to freezing or quick-freezing at sea and on land for further processing.[46] 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 MOLLUSKS, CRUSATCEANS, 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)[47].

09.2.3 FROZEN MINCED AND CREAMED FISH PRODUCTS, INCLUDING MOLLUSKS, CRUSATCEANS, 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 MOLLUSKS, CRUSATCEANS, AND ECHINODERMS:

Includes all ready-to-eat cooked products as described in the sub-categories.

---

46 Ibid., pp. 464-468.

47 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 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 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 09.2.4.3). Examples include: cooked 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.[46] 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 MOLLUSKS, CRUSATCEANS, 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.[46] 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 MOLLUSKS, CRUSATCEANS, 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.[46]

09.3.2 FISH AND FISH PRODUCTS, INCLUDING MOLLUSKS, CRUSATCEANS, 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.[46] 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.[46] 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 category 09.2.1, 09.2.4.1, and 09.2.5, respectively; fresh fish roe is found in category 09.1.1.

APPENDIX II

09.3.4 SEMI-PRESERVED FISH AND FISH PRODUCTS, FISH AND FISH PRODUCTS, INCLUDING MOLLUSKS, CRUSATCEANS, AND ECHINODERMS (e.g., FISH PASTE), EXCLUDING PRODUCTS OF FOOD CATEGORIES 09.3.1 - 09.3.3:

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.[48] Cooked fish or crustacean pastes (surimi-like products) are found in 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.[46] This category excludes fully cooked products (see 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 (10.1), products that may substitute for fresh eggs (10.2) and other egg products (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.[49]

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.

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).[50]

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).

---

48 *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.

49 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 411-414.

50 *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.

APPENDIX II

11.0 SWEETENERS, INCLUDING HONEY:

Includes all standardized sugars (11.1), non-standardized products (e.g., 11.2, 11.3, 11.4 and 11.6), and natural sweeteners (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.[51]

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.[51]

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 colour. Soft brown sugar is fine grain moist sugar that is light to dark brown in colour.. Glucose syrup is a purified concentrated aqueous solution of nutritive saccharides derived from starch and/or inulin.[52] 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.[51]

11.1.3.1 Dried glucose syrup used to manufacture sugar confectionery:

Dried glucose syrup, as described in 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 11.1.3, used to manufacture candy products that are included in food category 05.2 (e.g., hard or soft candies).

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.[51]

11.1.5 PLANTATION OR MILL WHITE SUGAR:

Purified and crystallized sucrose with a polarisation of not less than 99.5°Z .[51]

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),[52] and other sweeteners, such as high fructose corn syrup, high fructose inulin syrup and corn sugar.

---

51 Codex Standard for Sugars (CXSN 212-2001 Rev. 1).

52 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 631-633.

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), 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.[53] 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 SOY PROTEIN PRODUCTS) AND FERMENTED SOYBEAN PRODUCTS:

This is a broad category that includes substances added to food to enhance its aroma and taste (12.1 – salt; 12.2 – spices; 12.3 – vinegars; and 12.4 - mustards), certain prepared foods (12.5 – soups; 12.6 – sauces; and 12.7 – salads), and substitutes and analogues of meat and fish products (12.9 - protein products).

12.1 Salt:

Primarily food-grade sodium chloride. Includes table salt, iodized and fluoride iodized salt, and dendritic salt.

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

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. Salt substitutes are seasonings with reduced sodium content intended to be used on food in place of salt. 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), seasoning for noodles, and fermented soybean paste (miso). 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 fermentation of ethanol from a suitable source (e.g., wine, cider), Examples include, cider vinegar, wine vinegar, malt vinegar, , spirit vinegar, and fruit (wine) vinegar.[54]

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)[55].

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).

---

53 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 636. Codex Standard for Honey (CXSN 012-2001 Rev. 2).

54 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 719-720.

55 Ibid., p. 718.

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 (12.6.1) and non-emulsified (12.6.2) products, whereas the sub-category for the mixes (12.6.3) encompasses both emulsified and non-emulsified sauce mixes.

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- and milk-based sauces, gravies and dressings. Examples include: barbecue sauce, tomato ketchup, cheese sauce, thick soya bean 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, soy 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 cereal protein and vegetable protein analogues of or substitutes for standard products, such as meat, fish or milk. Examples include: vegetable protein analogues, soymilk (a soy-based milk substitute) , 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, and caseinates (e.g., edible acid casein).[56]

---

[56] Codex Standard for Edible Casein Products (CXSN A-18-2001 Rev. 1).

[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

12.11 Soy protein products

12.11.1 Soybean milk

12.11.2 Soybean milk film

12.11.3 Other soybean protein products (including non-fermented soy sauce)**]**

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.[57] Dietetic foods other than those in 13.0 are included in the categories for their standard counterparts.[58]

13.1 Infant formulae and follow-up formulae:

Foods that are intended for infants and for young children as defined in the sub-categories 13.1.1 and 13.1.2.

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 13.3.2, may be, hydrolyzed protein and/or amino acid-based, or milk-based.

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).[59] They may be ready-to-eat or in a powdered form to be reconstituted with water. Products, other than those under food category 13.3.2, may be soy based hydrolyzed protein and/or amino acid-based, or milk-based.

[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.[60] These foods exclude infant formulae (13.1.1) and follow-up formulae (13.1.2).[61] 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 **[**including those for infants and young children**]**:

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.[62]

---

57 Codex General Standard for Labelling of and Claims for Prepackaged Foods for Special Dietary Use (CXSN 146-1985).

58 For example, diet soda is found in 14.1.4.1, and low-joule jam is found in 04.1.2.5.

59 Codex Standard for Follow-Up Formula (CXSN 156-1987, amended 1989).

60 Codex Standard for Processed Cereal-Based Foods for Infants and Children (CXSTAN 74-1981, amended 1991 under revision).

61 Codex Standard for Canned Baby Foods (CXSN 073-1981, amended 1989).

62 Codex Standard for the Labelling of and Claims for Foods for Special Medical Purposes (CXSN 180-1991).

APPENDIX II

[13.3.1 DIETETIC FOODS FOR SPECIAL MEDICAL PURPOSES INTENDED FOR ADULTS**]**:

Foods as described in 13.3 for use by older children and adults only.

[13.3.2 DIETETIC FOODS FOR SPECIAL MEDICAL PURPOSES INTENDED FOR INFANTS AND YOUNG CHILDREN**]**:

Foods as described in 13.3 for use by infants and young children. Examples include: infant formulae, follow-on formulae, biscuits, rusks and cereals formulated for use under medical supervision.

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.[63] 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:

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.

13.6 Food supplements:

Includes vitamin and mineral supplements in tablet or liquid form, where national jurisdictions regulate these products as food.[64]

14.0 BEVERAGES, EXCLUDING DAIRY PRODUCTS:

This major category is divided into the broad categories of non-alcoholic (14.1) and alcoholic (14.2) beverages. Dairy-based beverages are included in 01.1.2.

14.1 Non-alcoholic ("soft") beverages:

This broad category includes waters and carbonated waters (14.1.1), fruit and vegetable juices (14.1.2), fruit and vegetable nectars (14.1.3), water-based flavoured carbonated and non-carbonated drinks (14.1.4), and water-based brewed or steeped beverages such as coffee and tea (14.1.5).

14.1.1 WATERS:

Includes natural waters (14.1.1.1) and other bottled waters (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).[65]

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 and/or flavours. Examples are table water, bottled water with or without added minerals, purified water, seltzer water, club soda, and sparkling water.

---

63 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).

64 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.

65 Codex Standard for Natural Mineral Waters (CXSN108-1997 Rev. 1 Amended 2001).

APPENDIX II

[14.1.2 FRUIT AND VEGETABLE JUICES:

There is an important distinction between fruit and vegetable juices and drinks made with, based on, or containing fruit or vegetable juice. The latter are prepared from fruit or vegetable juices or their concentrates, with or without sweeteners, diluted with water, or soda water,[66] and are found in food category 14.1.4. Fruit-vegetable juice blends have separate classifications for each component (i.e., fruit juice (14.1.2.1) and vegetable juice (14.1.2.3)).

14.1.2.1 Canned or bottled (pasteurized) fruit juice:

Prepared from fruit that is washed and disintegrated in a mill; the juice is separated, filtered, clarified (if necessary), pasteurized and placed in containers for sale. The product may be deaerated by evacuation or purging with an inert gas such as nitrogen or carbon dioxide.[66, 67] The product may be concentrated and reconstituted with water prior to sale as a ready-to-drink product.[68] Products may be based on a single fruit or on fruit blends. Examples include: orange juice, apple juice, black currant juice, and lemon juice.

14.1.2.2 Canned or bottled (pasteurized) vegetable juice:

Prepared from vegetables that are washed, blanched and disintegrated in a mill; the juice is separated, pasteurized and placed in containers for sale.[69] The product may be concentrated and reconstituted with water prior to sale as a ready-to-drink product.[70] Products may be based on a single vegetable (e.g., tomato) or blends of vegetables (e.g., tomatoes, carrots, celery).

14.1.2.3 Concentrates (liquid or solid) for fruit juice:

Prepared by the evaporation, freezing, or high pressure filtration of fruit juice.[66] Sold in powder, 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 (liquid or solid) for vegetable juice:

As for concentrates for fruit juice, are sold in powder, liquid, syrup and frozen forms for the preparation of a ready-to-drink juice by addition of water. Includes tomato juice concentrate.

14.1.3 FRUIT AND VEGETAGLE NECTARS:

Fruit and vegetable nectars are pulpy beverages produced from slurries, juice concentrate or whole fruits or vegetables by homogenization with water and sugar (if necessary).[66, 71] Fruit-vegetable nectar blends are reported under their components (i.e., fruit nectar and vegetable nectar).

14.1.3.1 Canned or bottled (pasteurized) fruit nectar:

The homogenized pulpy fruit slurry is pasteurized prior to packaging. Products may be based on a single fruit or on fruit blends. Examples include: pear nectar and peach nectar.

14.1.3.2 Canned or bottled (pasteurized) vegetable nectar:

The homogenized pulpy vegetable slurry is pasteurized prior to packaging. Products may be based on a single vegetable or on a blend of vegetables.

14.1.3.3 Concentrates (liquid or solid) for fruit nectar:

Prepared by the evaporation or freezing of fruit nectar. Sold in powder, liquid, syrup and frozen forms for the preparation of ready-to-drink nectars by addition of water. Examples: pear nectar concentrate and peach nectar concentrate.

---

66 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, pp. 617-620.

67 Codex General Standard for Vegetable Juices (CXSN 179-1991).

68 See Codex Standards for Fruit Juices Preserved Exclusively by Physical Means (e.g., Orange Juice Preserved Exclusively by Physical Means: CXSN 045-1981).

69 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 576.

70 Codex Standards for Vegetable Juices Preserved Exclusively by Physical Means (CXSN 179-1991).

71 Codex Standard for Apricot, Peach and Pear Nectars Preserved Exclusively by Physical Means (CXSN 044-1981).

14.1.3.4 Concentrates (liquid or solid) for vegetable nectar:

Prepared by the evaporation or freezing of vegetable nectar. Sold in powder, 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.[72] Also, includes coffee-, tea- and herbal-based drinks.

14.1.4.1 Carbonated water-based flavoured drinks:

Includes water-based flavoured 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 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.

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, 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 category 01.1.2, and cocoa mixes in 05.1.1.

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

The alcohol-free and low-alcoholic counterparts are included in the same 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.[73]

14.2.2 CIDER AND PERRY:

Fruit wines made from apples (cider) and pears (perry). Also includes cidre bouche.[74]

---

72 Fruit and vegetable juices *per se* are found in 14.1.2.1 and 14.1.2.2, respectively.

73 *Food Chemistry*, H.-D. Belitz & W. Grosch, Springer-Verlag, Heidelberg, 1987, p. 644.

74 Ibid. pp. 669-679.

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).[75]

14.2.3.1 Still grape wine:

Grape wine (white, red, rosϑ, 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.[74]

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.[74]

14.2.4 WINES (OTHER THAN GRAPE):

Includes wines made from fruit other than grapes, apples and pears,[76] 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.[74]

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: aperteifs, brandy (distilled wine), cordials, liqueurs (including emulsified liqueurs), bagaceira belha (grappa from Portugal; bagaceira is a drink distilled from bagao (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)[77], mistela (also mistelle (France) and jeropico (South Africa); unfermented grape juice fortified with grape alcohol), ouzo (Greek liqueur flavoured with aniseed), rum, tsikoudia (grappa from Crete), tspouro, wienbrand (style of grape brandy devised by Hugo Asbach, Rudesheim, Germany; literally, "burnt wine")[77], cachaa (Brazilian liquor made from fermented distilled sugar cane juice) [78], tequila, whiskey, and vodka.[74,79,80]

---

75 Ibid. p, 654. OIV – International Code of Oenological Practices

76 Grape wines are included in 14.2.3; and apple wine (cider) and pear wine (perry) are included in 14.2.2.

77 *The Wordswoth Dictionary of Drink*, N. Halley, Wordsworth Ltd., Hertfordshire, England, 1996.

78 *Insight Guide: Rio de Janeiro*, APA Publications, GmBH & Co., Verlag KG, Singapore, 2000, p. 241.

79 *OIV Lexique de la Vigne*.

80 See also: Glossary of Portuguese Terms at: www.bar-do-binho.com/help.htm

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 cachaa, fruit juice or coconut milk and, optionally, sweetened condensed milk)[78]; bitter soda and bitter vino; clarea (also clar 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).[74,79,81]

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 (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 05.1.4.

15.3 Snacks - fish based:

This describes savoury crackers with 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 01 – 15:

Includes prepared or composite dishes in which additives are used in addition to those present from 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: prepared dinners (e.g., frozen entrees), casseroles, mincemeat and snack dips (e.g., onion dip).

---

[81] *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.

APPENDIX III

DRAFT AMENDMENTS TO FOOD CATEGORIES OR INDIVIDUAL FOOD ITEMS EXCLUDED FROM THE GENERAL CONDITIONS OF TABLE THREE (ANNEX TO TABLE 3 OF THE GENERAL STANDARD FOR FOOD ADDITIVES)

(AT STEP 8 OF THE PROCEDURE)

The use of additives listed in Table Three
in the following foods is governed by the provisions in
Tables One and Two.

Category Number	Food Category
01.1.1	Milk and buttermilk (excluding heat-treated buttermilk)
01.2	Fermented and renneted milk products (plain) excluding food category 01.1.2 (dairy based drinks)
01.4.1	Pasteurized cream
01.4.2	Sterilized, UHT, whipping or whipped, and reduced fat creams
02.1	Fats and oils essentially free from water
02.2.1.1	Butter and concentrated butter (Only butter)
04.1.1	Fresh fruit
04.2.1	Fresh vegetables, (including mushrooms and fungi, roots and tubers, pulses and legumes**[**(including soybeans)**]**, and aloe vera), seaweeds, and nuts and seeds
04.2.2.1	Frozen vegetables**,** (including mushrooms and fungi, roots and tubers, pulses and legumes **[**(including soybeans)**]**, and aloe vera), seaweeds, and nuts and seeds
04.2.2.7	Fermented vegetable (including mushrooms and fungi, roots and tubers, pulses and legumes**[**(including soybeans)**]**, and aloe vera), seaweeds, products
06.1	Whole, broken or flaked grain, including rice
06.2	Flours and starches
06.4.1	Fresh pastas and noodles and like products
06.4.2	Dried pastas and noodles and like products
08.1	Fresh meat, poultry, and game
09.1	Fresh fish and fish products, including mollusks, crustaceans and echinoderms
09.2	Processed fish and fish products, including mollusks, crustaceans and echinoderms
10.1	Fresh eggs
10.2.1	Liquid egg products
10.2.2	Frozen egg products
11.1	Refined and raw sugars
11.2	Brown sugar, excluding products of food category 11.1.3 (soft white sugar, soft brown sugar, glucose syrup, dried glucose syrup, raw cane sugar)
11.3	Sugar solutions and syrups, also (partially inverted, including treacle and molasses, excluding products of food category 11.1.3 (soft white sugar, soft brown sugar, glucose syrup, dried glucose syrup, raw cane sugar)
11.4	Other sugars and syrups (e.g., xylose, maple syrup, sugar toppings)
11.5	Honey
12.1	Salt
12.2	Herbs, spices, seasoning (including salt substitutes) and condiments (Only herbs and salt substitutes)
13.1	Infant formulae and follow-up formulae
13.2	Weaning foods for infants and young children
13.3.2	Dietetic foods for special medical purposes intended for infants and young children
14.1.1.1	Natural mineral waters and source waters (Only natural mineral waters)
14.1.2	Fruit and vegetable juices
14.1.3	Fruit and vegetable nectars
14.1.5	Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal beverages, excluding cocoa
14.2.3	Grape wines

APPENDIX IV

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

(AT STEP 5 OF THE PROCEDURE)

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.

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 Member States.

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.

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 or safety assessments 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 quantitative risk assessments or, if sufficient, safety 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.

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 evaluation 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 evaluation or has performed a quantitative risk assessment and 2) the level of the contaminant in food can be determined through appropriate methods.

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 limits for contaminants and naturally occurring toxicants in food.

p) Before finalising proposals for MLs 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 non-science-based considerations 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 limits 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).
- 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 Limits 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.

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) Recognizing that primary production in developing countries is largely through small and medium size enterprises, 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

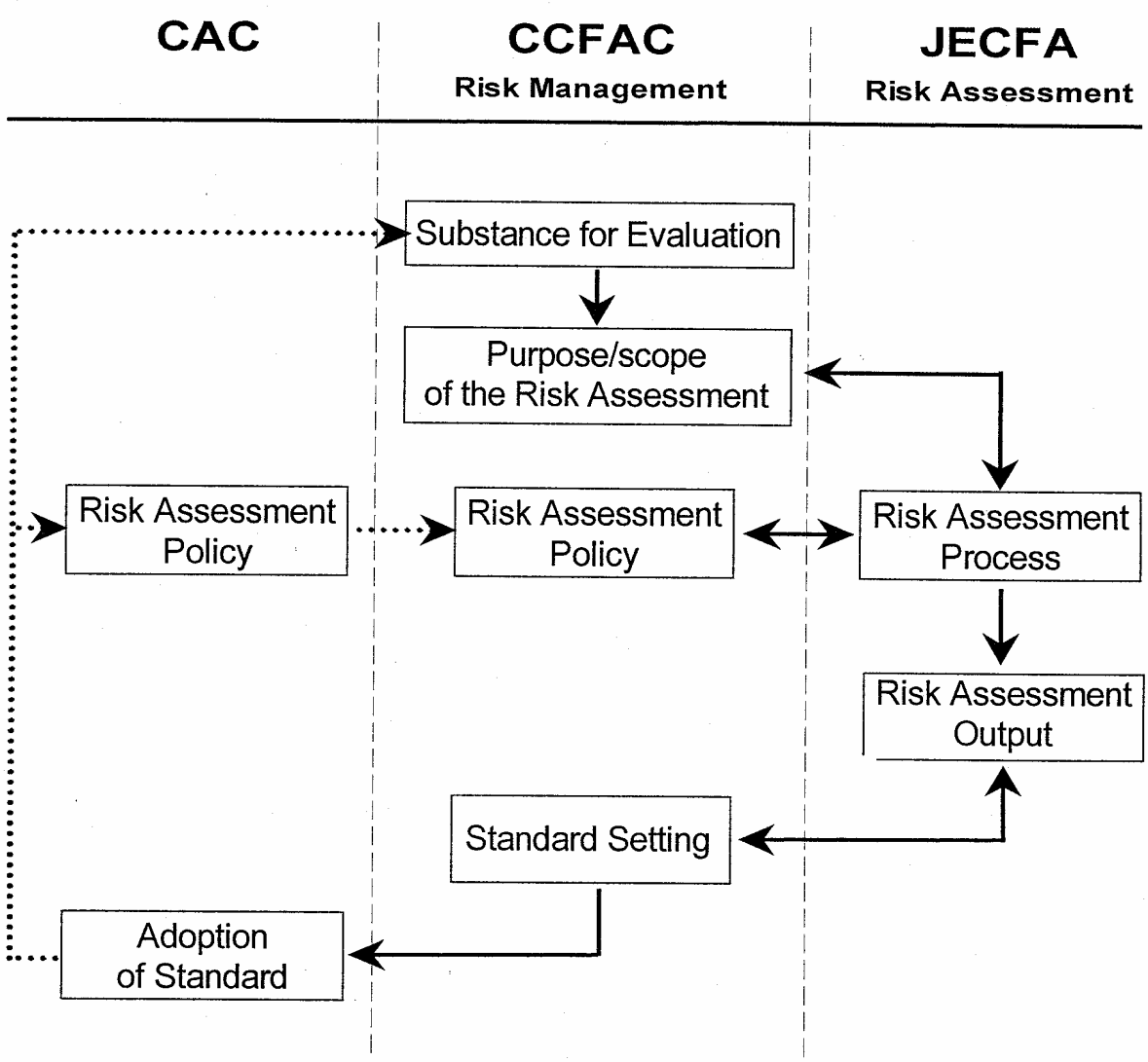
of its risk assessments and safety assessments in a complete and transparent manner. JECFA's communication of its risk assessments should not include the consequences of its analyses on trade or other non-public health consequence. Should JECFA include risk assessments of alternative risk management options, JECFA should ensure that these are consistent with the general risk analysis guidelines of Codex and CCFAC.

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.

APPENDIX IV

FIGURE 1[1]



The interactions of CAC, CCFAC and JECFA in the risk analysis process (the dotted arrows represent the iterative exchange of information).

APPENDIX V

DRAFT REVISED CODEX GENERAL STANDARD FOR IRRADIATED FOODS

(AT STEP 8 OF THE PROCEDURE)

1. SCOPE

This standard applies to foods processed by ionizing radiation that is used in conjunction with applicable hygienic codes, food standards and transportation codes. It does not apply to foods exposed to doses imparted by measuring instruments used for inspection purposes.

2. GENERAL REQUIREMENTS FOR THE PROCESS

2.1 Radiation Sources

The following types of ionizing radiation may be used:

a) Gamma rays from the radionuclides ^{60}Co or ^{137}Cs;

b) X-rays generated from machine sources operated at or below an energy level of 5 MeV;

c) Electrons generated from machine sources operated at or below an energy level of 10 MeV.

2.2 Absorbed Dose

For the irradiation of any food, the minimum absorbed dose should be sufficient to achieve the technological purpose and the maximum absorbed dose should be less than that which would compromise consumer safety, wholesomeness or would adversely affect structural integrity, functional properties, or sensory attributes. The maximum absorbed dose delivered to a food should not exceed 10kGy, except when necessary to achieve a legitimate technological purpose.[1]

2.3 Facilities and Control of the Process

2.3.1 Radiation treatment of foods should be carried out in facilities licensed and registered for this purpose by the competent authority.

2.3.2 The facilities shall be designed to meet the requirements of safety, efficacy and good hygienic practices of food processing.

2.3.3 The facilities should be staffed by adequate, trained and competent personnel.

2.3.4 Control of the process within the facility should include the keeping of adequate records including quantitative dosimetry.

2.3.5 Facilities and records should be open to inspection by appropriate authorities.

2.3.6 Control should be carried out in accordance with the Recommended International Code of Practice for Radiation Processing of Foods (CAC/RCP 19-1979, under revision).

---

1 High Dose Irradiation: Wholesomeness of Food Irradiated with Doses above 10kGy, Report of a Joint FAO/IAEA/WHO Study Group, Technical Report Series 890 WHO. Geneva, 1999; Safety and Nutritional Adequacy of Irradiated Foods, WHO, Geneva, 1994; and Wholesomeness of Irradiated Food, Report of Joint FAO/IAEA WHO Expert Committee, Technical Report Series 659, WHO, Geneva, 1981.

APPENDIX V

3. HYGIENE OF IRRADIATED FOODS

3.1 The irradiated food should be prepared, processed, and transported hygienically in accordance with the provisions of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 3-1997), including the application of the seven principles of Hazard Analysis and Critical Control Point (HACCP) system where applicable for food safety purposes. Where appropriate, the technical requirements for the raw materials and end product should comply with applicable hygienic codes, food standards, and transportation codes.

3.2 Any relevant national public health requirement affecting microbiological safety and nutritional adequacy applicable in the country in which the food is sold should be observed.

4. TECHNOLOGICAL REQUIREMENTS

4.1 General Requirement

The irradiation of food is justified only when it fulfils a technological requirement and/or is beneficial for the protection of consumer health. It should not be used as a substitute for good hygienic and good manufacturing practices or good agricultural practices.

4.2 Food Quality and Packaging Requirements

The doses applied shall be commensurate with the technological and public health purposes to be achieved and shall be in accordance with good radiation processing practice. Foods to be irradiated and their packaging materials shall be of suitable quality, acceptable hygienic condition and appropriate for this purpose and shall be handled, before and after irradiation, according to good manufacturing practices taking into account the particular requirements of the technology of the process.

5. RE-IRRADIATION

5.1 Except for foods with low moisture content (cereals, pulses, dehydrated foods and other such commodities) irradiated for the purpose of controlling insect reinfestation, foods irradiated in accordance with Sections 2 and 4 of this standard should not be re-irradiated.

5.2 For the purpose of this standard, food is not considered as having been re-irradiated when: (a) the irradiated food is prepared from materials which have been irradiated at low dose levels for purposes other than food safety, e.g. quarantine control, prevention of sprouting of roots and tubers; (b) the food, containing less than 5% of irradiated ingredient, is irradiated; or when (c) the full dose of ionizing radiation required to achieve the desired effect is applied to the food in more than one increment as part of processing for a specific technological purpose.

5.3 The cumulative maximum absorbed dose delivered to a food should not exceed 10 kGy as a result of re-irradiation except when it is necessary to achieve a legitimate technological purpose, and should not compromise consumer safety or wholesomeness of the food.

6. LABELLING

6.1 Inventory Control

For irradiated foods, whether prepackaged or not, the relevant shipping documents shall give appropriate information to identify the registered facility which has irradiated the food, the date(s) of treatment, irradiation dose and lot identification.

6.2 Prepackaged Foods Intended for Direct Consumption

The labelling of prepackaged irradiated foods should indicate the treatment and in all aspects should be in accordance with the relevant provisions of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev.2-1999).

6.3 Foods in Bulk Containers

The declaration of the fact of irradiation should be made clear on the relevant shipping documents. In the case of products sold in bulk to the ultimate consumer, the international logo and the words “irradiated” or “treated with ionizing radiation” should appear together with the name of the product on the container in which products are placed.

6.4 Post Irradiation Verification

When required and where applicable, analytical methods for the detection of irradiated foods may be used to enforce authorization and labeling requirements. The analytical methods used should be those adopted by the Codex Commission.

APPENDIX VI

SPECIFICATIONS FOR THE IDENTITY AND PURITY OF FOOD ADDITIVES ARISING FROM THE FIFTY-NINTH MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES

(AT STEP 5/8 OF THE PROCEDURE)

Note. Food additive specifications under 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 (4 substances)

- Alitame
- Amyloglucosidase from *Aspergillus niger,* var.
- Mineral oil (Medium and low viscosity)
- Salatrim

Certain colours and acidity regulators deletion of Heavy Metals (as Lead) and new limits for arsenic and lead as mg/kg

Food additive	As	Pb	Food additive	As	Pb
Allura red AC	-	2	Acetic acid, glacial	-	2
Amaranth	-	2	Ammonia solution	-	2
Beta Apo-8'-carotenal	-	2	Ammonium carbonate	-	2
beta-Apo-8'-carotenic acid ethyl ester	-	2	Ammonium dihydrogen phosphate	3	4
Azorubine	-	2	Calcium citrates	-	2
Beet red	3	2	Calcium dihydrogen phosphate	3	4
Brillant Blue FCF	-	2	Calcium DL malate	-	2
Brown HT	-	2	Calcium hydroxide	-	2
Canthaxanthin	-	2	Calcium lactate	-	2
Caramel colours	1	2	Calcium oxide	-	2
Carmines	-	5	Diammonium hydrogen phosphate	3	4
Beta-Carotene, Synthetic	-	2	Dicalcium pyrophosphate	3	4
Carthamus red	-	5	Dipotassium hydrogen phosphate	3	4
Carthamus yellow	-	5	Disodium pyrophosphate	3	4
Chlorophyllins, Copper complexes	3	5	Hydrochloric acid	-	1
Chlorophylls	3	5	Magnesium hydroxide carbonate	-	2
Chlorophylls, copper complexes	3	5	Magnesium hydroxide	-	2
Cochineal extract	-	5	Magnesium DL lactate	-	2
Curcumin	-	2	Phosphoric acid	3	4
Erythrosine	-	2	Potassium carbonate	-	2
Fast Green FCF	-	2	Potassium dihydrogen citrate	-	2
Fast Red E	-	2	Potassium hydrogen carbonate	-	2
Green S	-	2	Potassium hydroxide	-	2
Indigotine	-	2	Sodium acetate	-	2
Lithol rubine BK	-	2	Sodium carbonate	-	2
Mixed carotenoids	-	5	Sodium dihydrogen citrate	-	2
Paprika Oleoresin	3	2	Sodium dihydrogen phosphate	3	4
Patent Blue	-	2	Sodium DL malate	-	2
Quinoline Yellow	-	2	Sodium fumarate	-	2

APPENDIX VI

Food additive	As	Pb	Food additive	As	Pb
Red 2G	-	2	Sodium hydrogen carbonate	-	2
Riboflavin	-	2	Sodium hydrogen DL-malate	-	2
Riboflavin 5'-phosphate sodium	-	2	Sodium hydroxide	-	2
Riboflavin from *Bacillus subtilis*	-	1	Sodium sesquicarbonate	-	2
Saffron	3	2	Sulfuric acid	-	2
Sunset Yellow FCF	-	2	Tripotassium citrate	-	2
Tartrazine	-	2	Tripotassium phosphate	3	4
Turmeric oleoresin	3	2	Trisodium citrate	-	2
Vegetable carbon	3	2	Trisodium phosphate	3	4

Flavouring agents (262 substances)

111	Lauric acid	1028	2-Phenoxyethyl isobutyrate
113	Myristic acid	1029	Sodium 2-(4-methoxyphenoxy)propanoate
115	Palmitic acid	1030	Thiamine hydrochloride
116	Stearic acid	1031	4-Methyl-5-thiazoleethanol
182	Isoamyl laurate	1032	Thiazole
310	Isopropyl isovalerate	1033	2-(1-Methylpropyl)thiazole
390	*gamma*-Ionone	1034	2-Isobutylthiazole
455	Butyl sulfide	1035	4,5-Dimethylthiazole
476	Ethyl 3-methylthiopropionate	1036	2,4,5-Trimethylthiazole
483	Ethyl thioacetate	1037	2-Isopropyl-4-methylthiazole
490	Allyl thiopropionate	1038	4-Methyl-5-vinylthiazole
492	Methylthio 2-(acetyloxy)-propionate	1039	2,4-Dimethyl-5-vinylthiazole
493	Methylthio 2-(propionyloxy) propionate	1040	Benzothiazole
540	1,6-Hexanedithiol	1041	2-Acetylthiazole
542	1,9-Nonanedithiol	1042	2-Propionylthiazole
551	2-Mercaptopropionic acid	1043	4-Methylthiazole
553	Ethyl 3-mercaptopropionate	1044	2-Ethyl-4-methylthiazole
564	Dimethyl disulfide	1045	4,5-Dimethyl-2-isobutyl-3-thiazoline
566	Propyl disulfide	1046	2-Isobutyl-4,6-dimethyldihydro-1,3,5-dithiazine and 4-isobutyl-2,6-dimethyldihydro-1,3,5-dithiazine(mixture)
601	Ethyl 3-hydroxyhexanoate	1047	2-Isopropyl-4,6-dimethyl and 4-Isopropyl-2,6-dimethyldihydro-1,3,5-dithiazine (mixture)
602	Ethyl 3-oxohexanoate	1048	2,4,6-Triisobutyl-5,6-dihydro-4H-1,3,5-dithiazine
606	Levulinic acid	1049	2,4,6-Trimethyldihydro-4H-1,3,5-dithiazine
608	Butyl levulinate	1050	5-Methyl-2-thiophenecarboxaldehyde
609	1,4-Nonanediol diacetate	1051	3-Acetyl-2,5-dimethylthiophene
614	Diethyl malonate	1052	2-Thienylmercaptan
616	Dimethyl succinate	1053	2-Thienyl disulfide
617	Diethyl succinate	1054	4-Methyl-5-thiazoleethanol acetate
622	Diethyl tartrate	1055	2,4-Dimethyl-5-acetylthiazole
624	Diethyl sebacate	1056	2-Ethoxythiazole
625	Dibutyl sebacate	1057	2-Methyl-5-methoxythiazole
626	Ethylene brassylate	1058	4,5-Dimethyl-2-ethyl-3-thiazoline
627	Aconitic acid	1059	2-(2-Butyl)-4,5-dimethyl-3-thiazoline

642	3-Phenylpropyl hexanoate	1060	2-Methyl-3-furanthiol
678	*alpha*-Amylcinnamyl isovalerate	1061	2-Methyl-3-(methylthio)furan
729	Dihydroxyacetophenone	1062	2-Methyl-5-(methylthio)furan
745	5-Methylfurfural	1063	2,5-Dimethyl-3-furanthiol
752	2-Phenyl-3-carbethoxyfuran	1064	Methyl 2-methyl-3-furyl disulfide
814	*alpha*-Methylphenethyl butyrate	1065	Propyl 2-methyl-3-furyl disulfide
817	4- (p-Tolyl)-2-butanone	1066	Bis(2-methyl-3-furyl) disulfide
847	Benzyl 2,3-dimethylcrotonate	1067	Bis(2,5-dimethyl-3-furyl) disulfide
861	Glyceryl tribenzoate	1068	Bis(2-methyl-3-furyl) tetrasulfide
862	Propylene glycol dibenzoate	1069	2-Ethanethoic acid, S-(2-methyl-3-furanyl) ester
866	Tolualdehydes (mixed o,m,p)	1070	2,5-Dimethyl-3-furan thioisovalerate
870	Butyl p-hydroxybenzoate	1071	2,5-Dimethyl-3-thiofuroylfuran
872	Anisyl formate	1072	Furfuryl mercaptan
910	3-Oxohexanoic acid diglyceride	1073	*S*-Furfuryl thioformate
911	3-Oxooctanoic acid glyceride	1074	*S*-Furfuryl thioacetate
914	3-Oxodecanoic acid glyceride	1075	*S*-Furfuryl thiopropionate
915	3-Oxododecanoic acid glyceride	1076	Furfuryl methyl sulfide
916	3-Oxotetradecanoic acid glyceride	1077	Furfuryl isopropyl sulfide
917	3-Oxohexadecanoic acid glyceride	1078	Methyl furfuryl disulfide
921	Glyceryl tripropanoate	1079	Propyl furfuryl disulfide
922	Tributyrin	1080	2,2'-(Thiodimethylene)difuran
926	Propylene glycol stearate	1081	2,2'-(Dithiodimethylene)difuran
943	Acetaldehyde ethyl *cis*-3-hexenyl acetal	1082	2-Methyl-3-, 5- or 6-(furfurylthio)pyrazine
954	Ethyl vanillin propylene glycol acetal	1083	S-Methyl thiofuroate
955	4-Hydroxybenzyl alcohol	1084	4-((2-Furanmethyl)thio]-2-pentanone
956	4-Hydroxybenzaldehyde	1085	3-[(2-Methyl-3-furyl)thio]-4-heptanone
957	4-Hydroxybenzoic a	1086	2,6-Dimethyl-3-[(2-methyl-3-furyl)thio]-4-heptanone
958	2-Hydroxybenzoic acid	1087	4-[(2-Methyl-3-furyl)thio]-5-nonanone
959	4-Hydroxy-3-methoxy benzoic acid	1088	Ethyl 3-(furfurylthio)propionate
960	Vanillin *erythro*- & *threo*butan-2,3-diol acetal	1089	2-Methyl-3-thioacetoxy-4,5-dihydrofuran
961	Cyclohexanecarboxylic acid	1090	2-Methyl-3-tetrahydrofuranthiol
962	Methyl cyclohexanecarboxylate	1091	2,5-Dimethyl-3-tetrahydrofuranthiol, *cis* and *trans* isomers
963	Ethyl cyclohexanecarboxylate	1092	2,5-Dimethyl-3-thioacetoxy-tetrahydrofuran, *cis* and *trans* isomers
964	Cyclohexaneethyl acetate	1093	Cyclohexyl acetate
965	Cyclohexaneacetic acid	1094	Cyclohexyl butyrate
966	Ethyl cyclohexanepropionate	1095	Cyclohexyl formate
967	2,2,3-Trimethylcyclopent-3-en-1-yl acetaldehyde	1096	Cyclohexyl isovalerate
968	*cis*-5-Isopropenyl-cis-2-methylcyclopentan-1- carboxaldehyde	1097	Cyclohexyl propionate
969	Campholene acetate	1098	*cis* and *trans*-p-1(7)8-Menthadien-2-yl acetate
970	*alpha*-Campholenic alcohol	1099	3,3,5-Trimethyl cyclohexanol
971	p-Menth-1-en-9-al	1100	Cyclohexanone
972	1-p-Menthen-9-yl acetate	1101	Cyclopentanone
973	p-Mentha-1,8-dien-7-al	1102	2-Methylcyclohexanone
974	p-Mentha-1,8-dien-7-ol	1103	3-Methylcyclohexanone

975	p-Mentha-1,8-dien-7-yl acetate	1104	4-Methylcyclohexanone
976	1,2,5,6-Tetrahydrocuminic acid	1105	1-Methyl-1-cyclopenten-3-one
977	2,6,6-Trimethylcyclohexa-1,3-dienyl methanal	1106	2-Hexylidene cyclopentanone
978	2,6,6-Trimethyl-1-cyclohexen-1-acetaldehyde	1107	3-Methyl-2-cyclohexen-1-one
979	2,6,6-Trimethyl-1&2-cyclohexen-1-carboxaldehyde	1108	2,2,6-Trimethylcyclohexanone
980	2-Formyl-6,6-dimethylbicyclo[3.1.1]hept-2-ene (Myrtenal)	1109	2-*sec*-Butylcyclohexanone
981	Myrtenol	1110	4-Isopropyl-2-cyclohexenone
982	Myrtenyl acetate	1111	Tetramethylethylcyclohexenone (mixture of isomers)
983	6,6-Myrtenyl formate	1112	Isophorone
984	Santalol (*alpha* & *beta*)	1113	3-Methyl-5-propyl-2-cyclohexen-1-one
985	Santalyl acetate (*alpha* and *beta*)	1114	3-Methyl-2-(2-pentenyl)-2-cyclopenten-1-one
986	10-Hydroxymethylene-2-pinene	1115	Isojasmone
987	Phenethyl alcohol	1116	(E)-2-(2-Octenyl)cyclopentanone
988	Phenethyl formate	1117	2-(3,7-Dimethyl-2,6-octadienyl)cyclopentanone
989	Phenethyl acetate	1118	3-Decanone
990	Phenethyl propionate	1119	5-Methyl-5-hexen-2-one
991	Phenethyl butyrate	1120	6-Methyl-5-hepten-2-one
992	Phenethyl isobutyrate	1121	3,4,5,6-Tetrahydropseudoionone
993	Phenethyl 2-methylbutyrate	1122	6,10-Dimethyl-5,9-undecadien-2-one
994	Phenethyl isovalerate	1123	2,6,10-Trimethyl-2,6,10-pentadecatrien-14-one
995	Phenethyl hexanoate	1124	3-Penten-2-one
996	Phenethyl octanoate	1125	4-Hexen-3-one
997	Phenethyl tiglate	1126	2-Hepten-4-one
998	Phenethyl senecioate	1127	3-Hepten-2-one
999	Phenethyl phenylacetate	1128	3-Octen-2-one
1000	Acetaldehyde phenethyl propyl acetal	1129	2-Octen-4-one
1001	Acetaldehyde butyl phenethyl acetal	1130	3-Decen-2-one
1002	Phenylacetaldehyde	1131	4-Methyl-3-penten-2-one
1003	Phenylacetaldehyde dimethyl acetal	1132	5-Methyl-3-hexen-2-one
1004	Phenylacetaldehyde glyceryl acetal	1133	5-Methyl-2-hepten-4-one
1005	Phenylacetaldehyde 2,3-butylene glycol acetal	1134	6-Methyl-3,5-heptadien-2-one
1006	Phenylacetaldehyde diisobutyl acetal	1135	(E)-7-Methyl-3-octen-2-one
1007	Phenylacetic acid	1136	3-Nonen-2-one
1008	Methyl phenylacetate	1137	(E) & (Z)-4,8-Dimethyl-3,7-nonadien-2-one
1009	Ethyl phenylacetate	1138	(E)-6-Methyl-3-hepten-2-one
1010	Propyl phenylacetate	1139	(E,E)-3,5-Octadien-2-one
1011	Isopropyl phenylacetate	1140	3-Octen-2-ol
1012	Butyl phenylacetate	1141	(E)-2-Octen-4-ol
1013	Isobutyl phenylacetate	1142	2-Pentyl butyrate
1014	Isoamyl phenylacetate	1143	(+/-)Heptan-3-yl acetate
1015	Hexyl phenylacetate	1144	(+/-)Heptan-2-yl butyrate
1016	3-Hexenyl phenylacetate	1145	(+/-)Nonan-3-yl acetate
1017	Octyl phenylacetate	1146	2-Pentyl acetate

1018	Rhodinyl phenylacetate	1147	1-Penten-3-one
1019	Linalyl phenylacetate	1148	1-Octen-3-one
1020	Geranyl phenylacetate	1149	2-Pentyl-1-buten-3-one
1021	Citronellyl phenylacetate	1150	1-Penten-3-ol
1022	Santalyl phenylacetate (*alpha* and *beta*)	1151	1-Hexen-3-ol
1023	p-Tolylacetaldehyde	1152	1-Octen-3-ol
1024	p-Isopropylphenylacetaldehyde	1153	1-Decen-3-ol
1025	Methyl p-tert-butylphenylacetate	1154	(E,R)-3,7-Dimethyl-1,5,7-octatrien-3-ol
1026	Phenoxyacetic acid	1155	6-Undecanone
1027	Ethyl (p-tolyloxy)acetate	1156	2-Methylheptan-3-one

CATEGORY II (RECOMMENDED FOR ADOPTION AFTER EDITORIAL CHANGES, INCLUDING TECHNICAL REVISIONS)

Food Additives

Cross-linked sodium carboxymethyl cellulose:

1. Under the identification test “Colour reaction”, correct the amount of sample to be used from 0.5 g to 1.0 g.

2. Correct formula for calculation of Degree of substitution on page 15: insert a subtraction sign (-) between 7102 and 80C

Flavouring agents

None

APPENDIX VII

DRAFT AMENDMENTS TO THE INTERNATIONAL NUMBERING SYSTEM FOR FOOD ADDITIVES

(AT STEP 8 OF THE PROCEDURE)

INS NUMBER	COMPOUND	TECHNOLOGICAL FUNCTION
905d	Mineral oil, high viscosity	Glazing agent, Release agent, Sealing agent
905e	Mineral oil, medium and low viscosity (Class I)	Glazing agent, Release agent, Sealing agent
905f	Mineral oil, medium and low viscosity (Class II)	Glazing agent, Release agent, Sealing agent
905g	Mineral oil, medium and low viscosity (Class III)	Glazing agent, Release agent, Sealing agent

PROPOSED DRAFT AMENDMENTS TO THE INTERNATIONAL NUMBERING SYSTEM FOR FOOD ADDITIVES

(AT STEP 5/8 OF THE PROCEDURE)

INS NUMBER	COMPOUND	TECHNOLOGICAL FUNCTION
962	D-Tagatose	Sweetener
457	Alpha-Cyclodextrin	Stabilizer, binder
468	Cross-linked Sodium Carboxymethyl Cellulose	Stabilizer, binder

APPENDIX VIII

PROPOSED DRAFT CCFAC POLICY FOR EXPOSURE ASSESSMENT OF CONTAMINANTS AND TOXINS IN FOODS OR FOOD GROUPS

(AT STEP 5 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 (CGSCTF) 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 risk analysis process related to contaminants and toxins in foods is outlined in Annex I.

5. The proposed exposure assessment policies in this document are considered to be suitable for chronic exposure to contaminants and toxins. However, further work is needed to define the policies for more appropriate exposure assessments for genotoxic carcinogens and for hazards that pose acute risks to health, including chemicals with a teratogenic potential.

6. 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

7. 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.

8. 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.

9. 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.

2: Identification of foods/food groups that contribute significantly to total dietary exposure of the contaminant or toxin

10. 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.

11. 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.

12. The criteria are as follows:

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

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

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)*

13. 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.

14. 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

15. 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)*

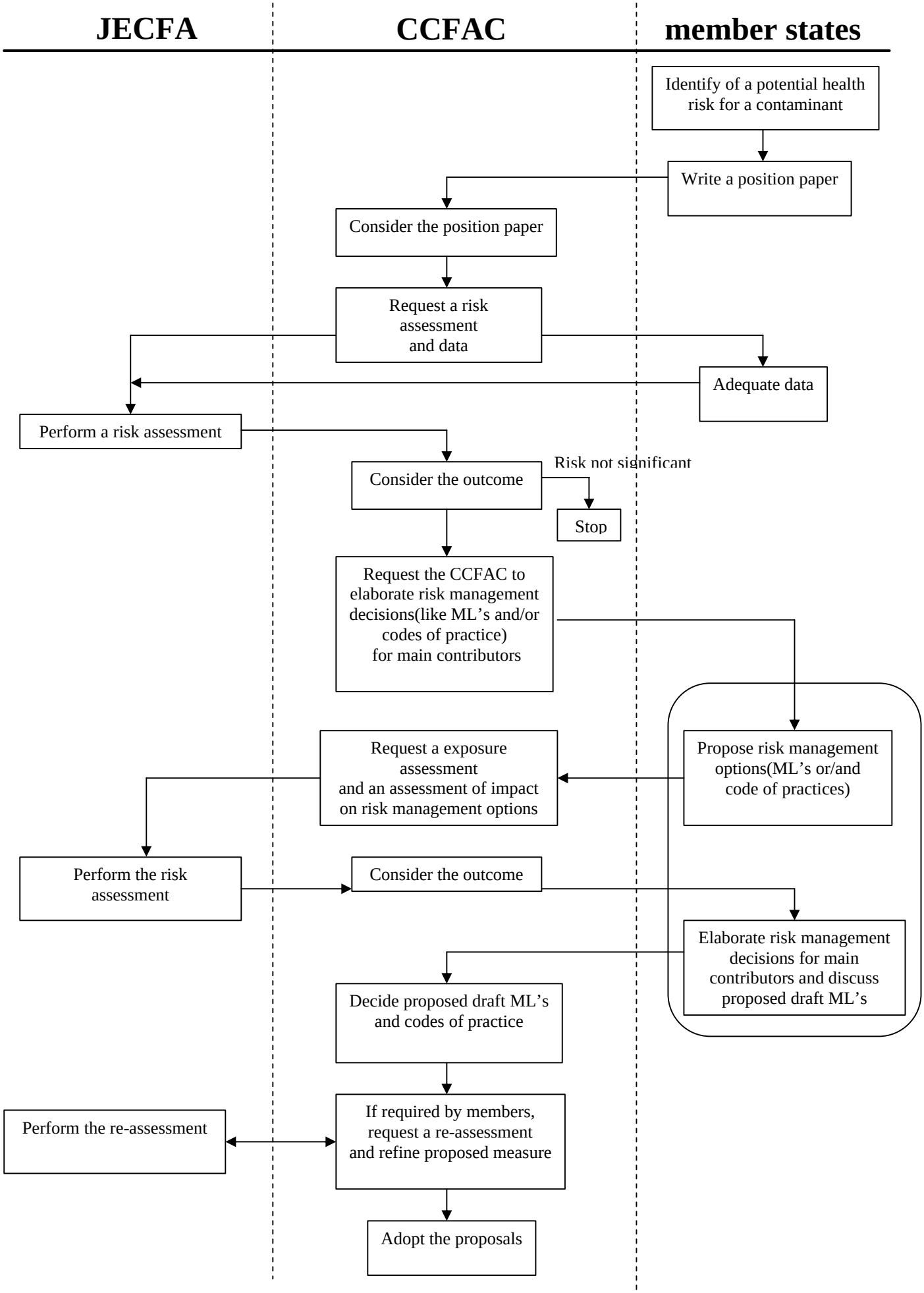
16. If requested by CCFAC, JECFA will assess the potential impact of different agricultural and production practices on contaminant levels in foods to the extent that scientific data are available to support such assessments. CCFAC will take this information into account when considering risk management options and for proposing Codes of Practice.

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.

---

1 Rounded to the nearest $1/10^{th}$ of a percent.

Annex I:
Role of JECFA, CCFAC and member states in the development of safety standard



APPENDIX IX

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF PATULIN CONTAMINATION IN APPLE JUICE AND APPLE JUICE INGREDIENTS IN OTHER BEVERAGES

(AT STEP 8 OF THE PROCEDURE)

INTRODUCTION

1. Patulin is a secondary metabolite produced by a number of fungal species in the genera *Penicillium*, *Aspergillus* and *Byssochlamys* of which *Penicillium expansum* is probably the most commonly encountered species. Patulin has been found as a contaminant in many mouldy fruits, vegetables, cereals and other foods, however, the major sources of contamination are apples and apple products.

2. Alcoholic fermentation of fruit juices destroys patulin and, therefore, fermented products such as cider and perry will not contain patulin. However, patulin has been observed in apple cider where apple juice was added after fermentation. Ascorbic acid has been reported to cause the disappearance of patulin from apple juice, although the optimal conditions for inactivation have not been fully established. Patulin is relatively temperature stable, particularly at acid pH. High temperature (150^{o} C) short-term treatments have been reported to result in approximately 20% reduction in patulin concentrations. However, thermal processing alone is not sufficient to ensure a product free of patulin.

3. There is no clear evidence that patulin is carcinogenic, however, it has been shown to cause immunotoxic effects and is neurotoxic in animals. The IARC concluded that no evaluation could be made of the carcinogenicity of patulin to humans and that there was inadequate evidence in experimental animals. Patulin was evaluated by the JECFA in 1990 and re-evaluated in 1995. The latter evaluation took into account the fact that most of the patulin ingested by rats is eliminated within 48 hours and 98% within 7 days. A study on the combined effects of patulin on reproduction, long-term toxicity and carcinogenicity pointed to a harmless intake of 43 μg/kg body weight per day. On the basis of this work and using a safety factor of 100, the JECFA set a provisional maximum tolerable daily intake of 0.4 μg/kg body weight.

4. Patulin occurs mainly in mould-damaged fruits although the presence of mould does not necessarily mean that patulin will be present in a fruit but indicates that it may be present. In some instances, internal growth of moulds may result from insect or other invasions of otherwise healthy tissue, resulting in occurrence of patulin in fruit which externally appears undamaged. However, it can also occur in bruised fruit after controlled atmosphere storage and exposure to ambient conditions both with and without core rot being present. Washing of fruit, or removal of mouldy tissue, immediately prior to pressing will not necessarily remove all the patulin present in the fruit since some may have diffused into apparently healthy tissue. Washing apples with ozone solution is reported to contribute substantially to the control of patulin during processing.

5. Although the spores of many of the moulds capable of producing patulin will be present on fruit whilst it is still on the tree, they will generally not grow on fruit until after harvest. However, mould growth and patulin production can occur in fruit pre-harvest if the fruit becomes affected by disease or damaged by insects or where fallen fruit is gathered for processing. The condition of the fruit at harvest, the way in which the fruit is handled subsequently (especially during storage) and the extent to which storage conditions are inhibitory to the growth of moulds, will all affect the likelihood of patulin contamination of juice and other products prepared from fresh and stored fruit.

6. The recommendations for reducing patulin contamination in apple juice in this document are divided into two parts:

I) Recommended practices based on Good Agricultural Practice (GAP).

II) Recommended practices based on Good Manufacturing Practices (GMP).

I. RECOMMENDED PRACTICES BASED ON GAP

PREHARVEST

7. During the dormant season cut off, remove and destroy all diseased wood and mummified fruits.

8. Prune trees in line with good commercial practice producing a tree shape which will allow good air movement through the tree and light penetration into the tree. This will also enable good spray cover to be achieved.

9. Measures should be taken to control pests and diseases which directly cause fruit rots or allow entry sites for patulin-producing moulds. These include canker, eye rot (*Botrytis* spp and *Nectria* spp), codling moth, fruitlet mining tortrix moth, winter moth, fruit tree tortrix, blastobasis, sawfly and dock sawfly.

10. Wet weather around the time of petal fall and of harvesting is likely to increase the risk of rot and appropriate measures, such as application of fungicide to prevent spore germination and fungal growth should be considered.

11. Apples of poor mineral composition are more likely to suffer physiological disorders in store and hence are more susceptible to particular types of rot especially by *Gloeosporium* spp and secondary rots such as *Penicillium*. Consignments of apples for the fresh fruit market which do not meet the recommended mineral compositional standards, as determined by fruit analysis, should therefore be excluded from long-term storage i.e. storage for longer than 3 - 4 months.

12. Where levels of minerals in the fruit for the fresh fruit market are outside optimum ranges, improving calcium and phosphorus levels in the fruit, particularly increasing the calcium/potassium ratio by controlled fertiliser usage, will improve cell structure, which will then reduce susceptibility to rotting.

13. Records of rot levels should be kept each year for individual orchards since historical data is the best guide, at present, to potential rot levels, which will indicate the need for fungicide application and the storage potential of the fruit from that orchard.

HARVESTING AND TRANSPORTATION OF FRUIT

14. Apples for processing are from two different origins:

a) Mechanically harvested fruit

15. Mechanically harvested fruit is obtained by shaking the tree and collecting the fruit from the ground with appropriate mechanical machinery.

16. All fruit should be handled as gently as possible and every effort made to minimize physical damage at all stages of the harvesting and transportation procedures.

17. Before shaking the trees, deteriorated fallen fruit (rotten, fleshed etc.) should be removed from the ground in order to make sure that only fresh and/or sound fruit is collected.

18. Mechanically harvested fruit has to be transported to processing plants within 3 days after harvest.

19. All containers used to transport harvested fruit should be clean, dry and free of any debris.

b) Fruit for the fresh fruit market

20. Fruit from orchards with a history of high levels of rot should be harvested separately and not considered for storage.

21. Ideally all fruit should be picked in dry weather conditions, when the fruit is mature, and placed in clean bins or other containers (e.g. boxes) suitable for transportation directly to store. Bins or boxes should be cleaned, ideally by hosing with clean water or preferably by scrubbing with soap and water, and fruit and leaf debris should be removed. Cleaned bins and boxes should be dried prior to use. Avoid exposure of fruit to rain.

22. Adequate training and supervision should be provided to ensure good damage-free picking practice.

23. All fruit in which the skin is damaged, or with the flesh exposed, as well as all diseased fruit, should be rejected in the orchard at the time of picking and fruit bruising should be minimised as far as possible.

24. All soil-contaminated fruit, i.e. rain splashed fruit or fruit on the ground, should be rejected for storage purposes.

25. Care must be taken to avoid the inclusion of leaves, twigs etc. in the picked fruit.

26. Fruit should be placed in cold storage within 18 hours of harvest and cooled to the recommended temperatures (see Table 1) within 3 - 4 days of picking.

27. During transport and storage, measures should be taken to avoid soil contamination.

28. Care must be taken during handling and transport of the bins or boxes in the orchard, and between the orchard and store, to avoid soil contamination of the container and the fruit and to minimize physical damage e.g. bruising of the fruit.

29. Harvested fruit should not be left in the orchard overnight but moved to a hard standing area, preferably under cover.

POST-HARVEST HANDLING AND STORAGE PRACTICES OF FRUIT FOR THE FRESH FRUIT MARKET

30. All fruit, whether for the fresh market or for later processing, should be handled as gently as possible and every effort made to minimise physical damage e.g. bruising at all stages of post-harvest handling prior to pressing.

31. Apple growers, and other producers of juice who do not have controlled storage facilities, need to ensure that fruits for juicing are pressed as soon as possible after picking.

32. For controlled atmosphere storage ensure that stores are checked for gas tightness, where appropriate, and that all monitoring equipment is tested before harvesting commences. Pre-cool stores thoroughly before use.

33. Where appropriate post harvest fungicide treatments may be applied in accordance with authorized conditions of use.

34. Stored apples should be examined regularly, at least once a month, for rot levels; a record of the levels should be maintained from year to year. The sampling procedure used should minimize the risk of atmospheric changes occurring in the store (see para. 37).

35. Random samples of fruit should be placed in suitable containers (e.g. net bags) situated close to the inspection hatches to permit monitoring of fruit condition during the storage period (see para. 36). Samples should be examined for rots, general fruit condition and shelf life at least every month. Shorter intervals may be recommended in stores where the fruit storage conditions are less than optimum and/or the fruit has a predicted storage life of less than 3 months, because of adverse growth and/or harvesting conditions.

36. Where samples indicate problems with fruit condition appropriate action should be taken to remove the fruit for use before extensive damage occurs.

37. Mould growth normally occurs in a warm environment. Rapid cooling and maintenance of store atmosphere conditions will improve fruit condition. Ideally fruit should be loaded and cooled to less than 5^{o} C in 3 - 4 days and to optimum temperatures within a further 2 days. Controlled atmosphere conditions should be achieved within 7 - 10 days from the start of loading, and ultra-low oxygen regimes (i.e. less than 1.8% oxygen) should be established within a further 7 days.

POST-STORAGE GRADING OF FRUIT FOR THE FRESH MARKET OR JUICE MANUFACTURE

38. All rotten fruits, even those with only small areas of rot, should be eliminated as far as possible and wholesome fruit should be kept in a clean bulk container.

39. When containers are removed from storage to select fruit for retail distribution, the containers of fruit remaining for juicing should be specifically marked and returned to cold store within 12 hours of sorting. The time the fruit is at ambient temperatures should be kept to a minimum. Ideally fruit for juicing should be kept at $< 5^{o}$ C between withdrawal from store and juicing and should be utilized as soon as possible.

40. Fruit which is to be sent for juicing should be utilized as soon as possible and within the normal shelf life which would be recommended for fruit from the same store. Any bruising will encourage patulin formation hence bruising should be kept to a minimum, especially if fruit is to be stored for longer than 24 hours at ambient temperature before juicing.

II. RECOMMENDED PRACTICES BASED ON GMP

TRANSPORTATION, CHECKING, AND PRESSING OF FRUIT

Mechanically harvested fruit and fruit for the fresh market

(a) fruit for the fresh market

41. Stored fruit should be transported from the cold store to the processor in the shortest time possible (ideally <24 hours to pressing unless cold stored).

42. Varieties with an open calyx are particularly susceptible to core rots. These varieties should be examined for internal rots by regular checks immediately prior to pressing. An appropriate random sample of apples should be preferably taken from each separate batch of fruit. Each apple is then cut across its equator and examined for signs of mycelial growth. If the frequency of core rots exceeds an agreed level the consignment should not be used for juicing. The processor should specify the maximum proportion of supplied fruit which can have any sign of rotting, taking into account the capacity of the processor to remove the rotting fruit during pre-process inspection. If this proportion is exceeded the whole consignment of fruit should be rejected.

43. On arrival at the factory the fruit should be checked for quality, particularly for evidence of both external and internal mould damage (see para. 44).

(b) mechanically harvested fruit and fruit for the fresh market

44. During processing and prior to pressing, the fruit should be sorted carefully to remove any visually mouldy fruit (check randomly and routinely for internal mould by cutting some fruit as in para. 44) and washed thoroughly, using potable or suitably treated water.

45. Juice presses and other manufacturing equipment should be cleaned and sanitised in accordance with industry "best practices". Juice presses and other equipment will generally be washed down with pressured water hoses and sanitised by application of a suitable sanitiser, followed by a further rinse with potable cold water. In some plants, which operate almost continuously, this should preferably be a once per shift or once per day cleaning operation.

46. After pressing samples of juice should be taken for analysis. A representative bulk production sample should analysed for patulin by an appropriate method in a laboratory which is accredited to carry out such analyses.

47. The juice should preferably be chilled to $<5^{o}$ C and maintained chilled until it is concentrated, packaged or pasteurised.

48. Juice should only be sent for packing on a positive release basis after patulin analysis has been confirmed as being below the maximum agreed limit. Specifications for the purchase of apple juice should include an appropriate limit for patulin subject to confirmation by the recipient.

PACKAGING AND FINAL PROCESSING OF JUICE

49. Moulds which are capable of producing patulin may occur, together with other moulds and yeasts, particularly in NFC juice. It is essential to prevent the development of such organisms during transport and storage to prevent spoilage of the product and by the same means prevent the production of patulin.

50. If juice is to be held for a period prior to use the temperature should preferably be reduced to 5^{o} C or less, in order to reduce microbial development.

51. Most juice will be heat processed to ensure destruction of enzymes and spoilage organisms. It must be recognized that whilst such processes will generally destroy fungal spores and vegetative mycelium the process conditions will not destroy any patulin which is already present.

APPENDIX IX

QUALITY ASSESSMENT OF JUICE

52. Specifications for the purchase of apple juice or apple juice concentrates should include a maximum limit for patulin based on an appropriate method of analysis.

53. A sampling plan should be developed for random sampling of product to assure that the finished product is within the maximum limit for patulin.

54. The packer must satisfy himself that the juice supplier is able to control properly his own operations to ensure that the recommendations given above are carried out.

55. Assessment of the quality of apple juice by the packer will include ^{o}Brix, acidity, flavour, colour, turbidity, etc. The microbiological quality should be carefully monitored since this indicates not only the risk level of potential organisms for the production of patulin but also the hygienic aspects of the previous stages in the production cycle.

56. Further checks should be carried out on the packaged product to ensure that no deterioration has taken place during the packaging stage.

APPENDIX IX

Table 1: Recommended temperatures for storage of apples in air

Variety	Temperature		Variety	Temperature	
	°C	°F		°C	°F
BRAMLEY	3.0 - 4.0	37 - 39	IDARED	3.5 - 4.0	38 – 39
COX'S ORANGE PIPPIN	3.0 - 3.5	37 – 38	JONAGOLD	0.0 - 0.5	32 – 33
DISCOVERY	1.5 - 2.0	35 – 36	RED DELICIOUS	0.0 - 1.0	32 – 34
EGREMONT	3.0 -- 3.5	37 – 38	SPARTAN	0.0 - 0.5	32 – 33
GOLDEN DELICIOUS	1.5 - 2.0	35 – 36	WORCESTER	0.0 - 1.0	32 – 34
CRISPIN	1.5 - 2.0	35 – 36			

APPENDIX X

DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF MYCOTOXIN CONTAMINATION IN CEREALS, INCLUDING ANNEXES ON OCHRATOXIN A, ZEARALENONE, FUMONISINS AND TRICOTHECENES

(AT STEP 8 OF THE PROCEDURE)

1. The complete elimination of mycotoxin contaminated commodities is not achievable at this time. The elaboration and acceptance of a General Code of Practice by Codex will provide uniform guidance for all countries to consider in attempting to control and manage contamination by various mycotoxins. In order for this Code of Practice to be effective, it will be necessary for the producers in each country to consider the general principles given in the Code, taking into account their local crops, climate, and agronomic practices, before attempting to implement provisions in the Code. It is important for producers to realize that good agricultural practices (GAP) represent the primary line of defense against contamination of cereals with mycotoxins, followed by the implementation of good manufacturing practices (GMP) during the handling, storage, processing, and distribution of cereals for human food and animal feed.

2. The recommendations for the reduction of mycotoxins in cereals are divided into two parts: recommended practices based on Good Agricultural Practice (GAP) and Good Manufacturing Practice (GMP); a complementary management system to consider in the future is Hazard Analysis Critical Control Point (HACCP) principles.

3. This General Code of Practice contains general principles for the reduction of various mycotoxins in cereals that should be sanctioned by national authorities. National authorities should educate producers regarding the environmental factors that promote infection, growth and toxin production in cereal crops at the farm level. Emphasis should be placed on the fact that the planting, preharvest and postharvest strategies for a particular crop will depend on the climatic conditions of that particular year, taking into account the local crops, and traditional production conditions for that particular country or region. There is need to develop quick, affordable and accurate test kits and associated sampling plans that will allow testing of grain shipments without undue disruption of operations. Procedures should be in place to properly handle, through segregation, reconditioning, recall or diversion, cereal crops that may pose a threat to human and/or animal health. National authorities should support research on methods and techniques to prevent fungal contamination in the field and during harvest and storage.

I. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICES (GMP)

PLANTING

4. Consider developing and maintaining a crop rotation schedule to avoid planting the same commodity in a field in two consecutive years. Wheat and maize have been found to be particularly susceptible to *Fusarium* species and they should not be used in rotation with each other. Crops such as potato, other vegetables, clover and alfalfa that are not hosts to *Fusarium* species should be used in rotation to reduce the inoculum in the field.

5. When possible and practical**,** prepare the seed bed for each new crop by plowing under or by destroying or removing old seed heads, stalks, and other debris that may have served, or may potentially serve as substrates for the growth of mycotoxin-producing fungi. In areas that are vulnerable to erosion, no-till practices may be required in the interests of soil conservation.

6. Utilize the results of soil tests to determine if there is need to apply fertilizer and/or soil conditioners to assure adequate soil pH and plant nutrition to avoid plant stress, especially during seed development.

7. When available, grow seed varieties developed for resistance to seed-infecting fungi and insect pests. Only seed varieties recommended for use in a particular area of a country should be planted in that particular area.

8. As far as practical, crop planting should be timed to avoid high temperature and drought stress during the period of seed development and maturation.

9. Avoid overcrowding of plants by maintaining the recommended row and intra-plant spacing for the species/varieties grown. Information concerning plant-spacing may be provided by seed companies.

APPENDIX X

PREHARVEST

10. 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.

11. Control weeds in the crop by use of mechanical methods or by use of registered herbicides or other safe and suitable weed eradication practices.

12. Minimize mechanical damage to plants during cultivation.

13. If irrigation is used, ensure that it is applied evenly and that all plants in the field have an adequate supply of water. Irrigation is a valuable method of reducing plant stress in some growing situations. Excess precipitation during anthesis (flowering) makes conditions favorable for dissemination and infection by *Fusarium* spp.; thus irrigation during anthesis and during the ripening of the crops, specifically wheat, barley, and rye, should be avoided.

14. Plan to harvest grain at low moisture content and full maturity, unless allowing the crop to continue to full maturity would subject it to extreme heat, rainfall or drought conditions. Delayed harvest of grain already infected by *Fusarium* species may cause a significant increase in the mycotoxin content of the crop.

15. Before harvest time, 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 grain quality losses and enhance mycotoxin formation. Keep important spare parts available on the farm to minimize time loss from repairs. Make sure that the equipment needed for moisture content measurements is available and calibrated.

HARVEST

16. Containers (e.g., wagons, trucks) to be used for collecting and transporting the harvested grain from the field to drying facilities, and to storage facilities after drying, should be clean, dry and free of insects and visible fungal growth before use and re-use.

17. As far as possible, avoid mechanical damage to the grain and avoid contact with soil during the harvesting operation. Steps should be taken to minimize the spread of infected seed heads, chaff, stalks, and debris onto the ground where spores may inoculate future crops.

18. During the harvesting operation**,** the moisture content should be determined in several spots of each load of the harvested grain since the moisture content may vary considerably within the same field.

19. Immediately after harvest, determine moisture levels of the crop; where applicable, dry the crop to the moisture content recommended for storage of that crop. Samples taken for moisture measurements should be as representative of the lot as possible**.** To reduce the variation of moisture content within a lot, the grain may be moved to another facility (or silo) after the drying process.

20. Cereals should be dried in such a manner that damage to the grain is minimized and moisture levels are lower than those required to support mold growth during storage (generally less than 15%). This is necessary to prevent further growth of a number of fungal species that may be present on fresh grains, especially *Fusarium* species.

21. Freshly harvested cereals should be cleaned to remove damaged kernels and other foreign matter. Kernels containing symptomless infections cannot be removed by standard cleaning methods. Seed cleaning procedures, such as gravity tables, may remove some infected kernels. More research is needed to develop practical procedures for separating symptomless infected kernels from those that are not infected**.**

STORAGE

22. Avoid piling or heaping wet, freshly harvested commodities for more than a few hours prior to drying or threshing to lessen the risk of fungal growth. Sun drying of some commodities in high humidity may result in fungal infection. Aerate the commodities by forced air circulation.

23. Make sure that the storage facilities include dry, well-vented structures that provide protection from rain, drainage of ground water, protection from entry of rodents and birds, and minimum temperature fluctuations.

24. Crops to be stored should be dried to safe moisture levels and cooled as quickly as possible after harvest. Minimize the amount of foreign materials and damaged kernels in stored grains. Refer to paragraph 29 to evaluate the use of approved pesticides.

25. The mycotoxin level in in-bound and out-bound grain should be monitored when warranted, using appropriate sampling and testing programs.

26. For bagged commodities, ensure that bags are clean, dry and stacked on pallets or incorporate a water impermeable layer between the bags and the floor.

27. Where possible, aerate the grain by circulation of air through the storage area to maintain proper and uniform temperature levels throughout the storage area. Check moisture content and temperature in the stored grain at regular intervals during the storage period.

28. Measure the temperature of the stored grain at several fixed time intervals during storage. A temperature rise of 2-3°C may indicate microbial growth and/or insect infestation. Separate the apparently infected portions of the grain and send samples for analysis. When separated, lower the temperature in the remaining grain and aerate. Avoid using infected grain for food or feed production.

29. Use good housekeeping procedures 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. Care should be taken to select only those chemicals that will not interfere or cause harm based on the intended end use of the grains and should be strictly limited.

30. The use of a suitable, approved preservative (e.g., organic acids such as propionic acid) may be beneficial. These acids are effective in killing various fungi and thus prevent the production of mycotoxins in grains intended only for animal feed. The salts of the acids are usually more effective for long-term storage. Care must be taken because these compounds can negatively affect the taste and odor of the grain.

31. 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 cause(s) of fungal growth and mycotoxin formation during a particular crop year and help to avoid similar mistakes in the future.

TRANSPORT FROM STORAGE

32. 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.

33. Shipments of grain should be protected from additional moisture by using covered or airtight containers or tarpaulins**.** Avoid temperature fluctuations and measures that may cause condensation to form on the grain, which could lead to local moisture build-up and consequent fungal growth and mycotoxin formation.

34. Avoid insect, bird and rodent infestation during transport by the use of insect-and rodent proof containers or insect and rodent repellent chemical treatments if they are approved for the intended end use of the grain.

II. A COMPLEMENTARY MANAGEMENT SYSTEM TO CONSIDER IN THE FUTURE

35. 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 several documents.[1],[2]

---

1 FAO. 1995. The use of hazard analysis critical control points (HACCP) principles in food control. FAO Food and Nutrition Paper No. 58 Rome

2 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

APPENDIX X

36. The HACCP concept is an all-encompassing integrated management system. When properly implemented, this system should result in a reduction of the levels of mycotoxins in many cereal grains. The use of HACCP as a food safety management system has many benefits over other types of management control systems in some segments of the food industry. At farm level, especially in the field, many factors that influence the mycotoxin contamination of cereals are environmentally related, such as weather and insects, and are difficult or impossible to control. In other words, critical control points often do not exist in the field. However, after harvesting, critical control points may be identified for mycotoxins 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 water content/water activity.

37. It is recommended that resources be directed to emphasizing Good Agricultural Practices (GAPs) at the preharvest level and Good Manufacturing Practices (GMPs) during the processing and distribution of various products. A HACCP system should be built on sound GAPs and GMPs.

38. It is also recommended that before further consideration is given to the HACCP system, reference should be made to the Codex Annex to CAC/RCP 1-1969, Rev.3 (1997) "Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Management".

39. Consideration should also be given to a HACCP manual for mycotoxin control recently published by FAO/IAEA.[3]

40. At the Third International Conference on Mycotoxins, which took place 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.[4] The implementation of HACCP principles will minimize mycotoxin contamination through applications of preventive controls to the extent feasible in the production, handling, storage and processing of each cereal crop.

---

3 FAO/IAEA training and reference center for food and pesticide control, 2001. Manuel on the Application of the HACCP System in Mycotoxin Prevention and Control. FAO Food and Nutrition Paper No. 73. Rome.

4 FAO. Preventing mycotoxin contamination. Food, Nutrition and Agriculture No. 23, 1999. Food and Nutrition Division, FAO, Rome

APPENDIX X

ANNEX 1

PREVENTION AND REDUCTION OF CONTAMINATION BY ZEARALENONE IN CEREAL GRAINS

RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICE (GAP) AND GOOD MANUFACTURING PRACTICE (GMP)

1. Good Agricultural Practice includes methods to reduce *Fusarium* infection and zearalenone contamination of cereals in the field and during planting, harvest, storage, transport and processing.

PLANTING

2. Refer to paragraphs 4-9 in the General Code of Practice.

PREHARVEST

3. Refer to paragraphs 10-15 in the General Code of Practice

4. The establishment of *Fusarium* infection in cereal heads during flowering should be monitored before harvest by sampling and determination of infection by standard microbiological methods. Also, mycotoxin content in representative preharvest samples should be determined. Utilization of the crop should be based on prevalence of infection and mycotoxin content of the grain.

HARVEST

5. Refer to paragraphs 16-21 in the General Code of Practice.

STORAGE

6. Refer to paragraphs 22-31in the General Code of Practice.

TRANSPORT FROM STORAGE

7. Refer to paragraphs 32-34 in the General Code of Practice

PROCESSING

8. Small, shriveled grain may contain more zearalenone than healthy normal grain. Winnowing grains at harvest or later will remove shriveled grain.

ZEARALENONE MANAGEMENT SYSTEM BASED ON HAZARD ANALYSIS CRITICAL CONTROL POINT SYSTEM (HACCP)

9. Refer to paragraphs 35-40 in the General Code of Practice.

APPENDIX X

ANNEX 2

PREVENTION AND REDUCTION OF CONTAMINATION BY FUMONISINS IN CEREAL GRAINS

RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICE (GMP)

1. Good Agricultural Practice includes methods to reduce *Fusarium* infection and fumonisin contamination of cereals during planting, harvest, storage, transport and processing.

PLANTING

2. Refer to paragraphs 4-9 in the General Code of Practice.

PREHARVEST

3. Refer to paragraphs 10-15 in the General Code of Practice.

HARVEST

4. Refer to paragraghs 16-21 in the General Code of Practice.

5. The time of harvest for maize should be carefully planned. It has been shown that maize grown and harvested during warm months may have fumonisin levels significantly higher than maize grown and harvested during cooler months of the year.

STORAGE

6. Refer to paragraphs 22-31 in the General Code of Practice.

TRANSPORT FROM STORAGE

7. Refer to paragraphs 32-34 of the General Code of Practice.

FUMONISINS MANAGEMENT SYSTEM BASED ON HAZARD ANALYSIS CRITICAL CONTROL POINT SYSTEM (HACCP)

8. Refer to paragraphs 35-40 in the General Code concerning HACCP.

APPENDIX X

ANNEX 3

PREVENTION AND REDUCTION OF CONTAMINATION BY OCHRATOXIN A IN CEREALS

RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICE (GMP)

1. Good Agricultural Practice includes methods to reduce fungal infection and ochratoxin A contamination of cereals during harvest, storage, transport and processing.

PLANTING

2. Refer to paragraphs 4-9 in the General Code of Practice.

PREHARVEST

3. Refer to paragraphs 10-15 in the General Code of Practice.

4. Factors during preharvest that may affect levels of ochratoxin A in harvested grains include frost damage, presence of competitive fungi, excessive rainfall and drought stress.

HARVEST

5. Refer to paragraphs 16-21 in the General Code of Practice.

PRESERVATION

6. Grain should be allowed to dry as much as possible before harvest consistent with local environment and crop conditions. If unable to harvest the grain when it has a water activity below 0.70, then dry the grain to a moisture content corresponding to a water activity of less than 0.70 (less than 14% moisture content in small grain) as quickly as possible. To avoid ochratoxin A formation, start the drying process immediately after harvest and preferably use heated-air drying. In the temperate climate region, when intermediate or buffer storage is necessary because of low drying capacity, make sure that the moisture content is less than 16%, that the buffer storage time is less than 10 days, and the temperature is less than 20 °C.

STORAGE

7. Refer to paragraphs 22-31 in the General Code of Practice.

TRANSPORT

8. Refer to paragraphs 32-34 in the General Code of Practice.

OCHRATOXIN A MANAGEMENT SYSTEM BASED ON HAZARD ANALYSIS CRITICAL CONTROL POINTS (HACCP)

9. Refer to paragraphs 35-40 in the General Code of Practice.

APPENDIX X

ANNEX 4

PREVENTION AND REDUCTION OF CONTAMINATION BY TRICOTHECENES IN CEREAL GRAINS

RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICE (GMP)

1. Good Agricultural Practices includes methods to reduce *Fusarium* infection and tricothecene contamination of cereals during planting, harvest, storage, transport and processing.

PLANTING

2. Refer to paragraphs 4-9 in the General Code of Practice.

PREHARVEST

3. Refer to paragraphs 10-15 in the General Code of Practice.

4. Do not permit mature grains to remain in the field for extended periods of time, particularly in cold, wet weather. T-2 and HT-2 toxins are not usually found in grains at harvest, but can result from grains that are water-damaged in the field or grains that become wet at harvest or during storage.

5. Refer to paragraph 4 in Annex 1.

6. Cereal growers should maintain close relations with local cereal trade groups. Such groups should be important sources of information and advice regarding choice of appropriate plan protection products, cultivars and strains that will take into account those resistant to *Fusarium* and are available for their location.

HARVEST

7. Refer to paragraphs 16-21 in the General Code of Practice.

STORAGE

8. Refer to paragraphs 22-31 in the General Code of Practice.

9. Be aware that cereal grains may be contaminated by more than one tricothecene mycotoxin along with their derivatives; therefore simple, rapid screening methods should be available for the analysis of several tricothecenes. Zearalenone, which is not a tricothecene, has been noted to regularly co-occur in cereals contaminated with DON and other tricothecenes.

TRANSPORT FROM STORAGE

10. Refer to paragraphs 32-34 in the General Code of Practice.

TRICOTHECENE MANAGEMENT SYSTEM BASED ON HAZARD ANALYSIS CRITICAL CONTROL POINT SYSTEM (HACCP)

11. Refer to paragraphs 35-40 in the General Code of Practice.

APPENDIX XI

PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN PEANUTS

(AT STEP 5 OF THE PROCEDURE)

1. This document is intended to provide guidance for all persons involved in producing 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.

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.

I RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP)

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.

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 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.

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.

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.

APPENDIX XI

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.

II GOOD MANUFACTURING PRACTICE (GMP).

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.

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.

BLANCHING

56. Blanching used in conjunction with gravity tables and electronic sorting is very efficient in removing aflatoxin in contaminated kernels. Colour sorting, combined with blanching have been shown to reduce aflatoxin contamination by as much as 90%.

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.

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. In other words 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.

APPENDIX XII

PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF LEAD CONTAMINATION IN FOODS

(AT STEP 5 OF THE PROCEDURE)

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. In its 1987 evaluation, JECFA concluded "that all possible steps should be taken to ensure that lead levels in food are as low as possible, and that contributions from other environmental sources are minimized."

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.

I. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICES (GMP)

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. Farmer 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.

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.

APPENDIX XII

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.

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.

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 daily 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. Hot water from the faucet should not be used for cooking or food preparation.

APPENDIX XIII

PROPOSED DRAFT MAXIMUM LEVELS FOR TIN

(AT STEP 3 OF THE PROCEDURE)

Tin	250 mg/kg for canned foods other than beverages
	200 mg/kg for canned beverages

APPENDIX XIV

PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM

(AT STEP 5 OF THE PROCEDURE)

Code No.	Food	ML (mg/kg)	Step	Remarks
FC 0001 FP 0009 FS 0012 FB 0018 FT 0026 FI 0030	Fruits	0.05	3	
GC 0654	Wheat grain	0.2	3	
MM 0097 PM 0110	Meat of cattle, pigs, sheep and poultry	0.05	3	
MM 0816	Horse meat	0.2	3	
VR 0589	Potato	0.1	3	Peeled
VR 0075 VS 0078	Stem and root vegetables	0.1	3	Excluding Celeriac and potato
VL 0053	Leafy vegetables	0.2	3	
HH 0726	Herbs	0.2	3	Fresh
VO 0449	Fungi, Edible	0.2	3	
VR 0578	Celeriac	0.2	3	
VA 0035 VB 0040 VC 0045 VO 0050 VP 0060 VD 0070	Other Vegetables	0.05	3	Excluding, Fungi and Tomatoes

PROPOSED DRAFT MAXIMUM LEVELS FOR CADMIUM

(AT STEP 3 OF THE PROCEDURE)

Code No.	Food	ML (mg/kg)	Step	Remarks
CM 0649	Rice, Polished	0.2	3	
VD 0541	Soy bean (dry)	0.2	3	
IM 0150	Molluscs (Including cephalopods)	1.0	3	
SO 0697	Peanut	0.2	3	

APPENDIX XV

PRIORITY LIST OF FOOD ADDITIVES, CONTAMINANTS AND NATURALLY OCCURRING TOXICANTS PROPOSED FOR EVALUATION BY JECFA

A. Food additives for toxicological and intake evaluation and development of specifications		***Data availability***	***Originally proposed by***
Aluminium from all sources (toxicity and intake of aluminium from its use in food additives and from other sources)		Unknown	CCFAC (GSFA)
Arpink red (new evaluation) [1]		2003	Czech Republic
Beeswax	consider the acceptability of use as carriers for flavours in category 14.4.4	Unknown	CCFAC (GSFA)
Candelilla wax	dito	Unknown	CCFAC (GSFA)
Benzoyl peroxide (data identified as necessary at fifty-fifth meeting of JECFA) [1]		2003	Canada
Enzyme preparations (new evaluations):			
• Hexose oxidase from Hansenula polymorpha[1]		June 2003	Denmark
• Xylanase from an self-cloned B. subtilis[1]		October 2003	Denmark
Approx. 170 flavouring agents (new evaluations)[1]		2003	USA
Magnesium sulfate (new evaluation) [1]		2003	USA
Stevioside[1]		November 2003	Japan, China
Components of antimicrobial washing solutions		2003	USA
Hydrogen peroxide Peroxyoctanoic acid 1-Hydroxyethylidene-1,1-disphosphonic acid Octanoic acid Peroxyacetic acid			
B. Contaminants and naturally occurring toxicants			
Acrylamide[1]		Ongoing research	FAO/WHO
Arsenic[1]		2003	JECFA Secretariat
Ergot alkaloids (full evaluation)		unknown	Canada
Ethyl carbamate (full evaluation)[1]		2003	CCFAC
Glycyrrhizic acid (full evaluation) [1]		anytime	Denmark
Phenylhydrazines, including agaritine (full evaluation)		anytime	Denmark
Polycyclic aromatic hydrocarbons, including benz[a]pyrene (full evaluation)[1]		2003	Netherlands, Canada, Denmark, Finland
Polybrominated diphenyl ether		unknown	Canada

[1]High priority for evaluation by JECFA in 2004