codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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JOINT OFFICE:

ALINORM 93/12

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION
Twentieth Session
Geneva. 28 June – 7 July 1993

REPORT OF THE TWENTY-FOURTH SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

The Hague. The Netherlands. 23-28 March 1992

Note: This report incorporates Codex Circular Letter CL 1992/8-FAC.

CX 4/30.2 CL 1992/8-FAC
April 1992

TO:
- Codex Contact Points
- Interested International Organizations
- Participants at the 24th Session of the Codex Committee on Food Additives and Contaminants

FROM: Chief, Joint FAO/WHO Food Standards Programme, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy

SUBJECT: **Distribution of the Report of the Twenty-fourth Session of the Codex Committee on Food Additives and Contaminants (ALINORM 93/12)**

The report of the Twenty-fourth Session of the Codex Committee on Food Additives and Contaminants is attached. It will be considered by the Twentieth Session of the Codex Alimentarius Commission to be held in Geneva from 28 June to 7 July 1993.

PART A: MATTERS FOR ADOPTION BY THE COMMISSION ARISING FROM THE TWENTY-FOURTH SESSION OF THE CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

The following matters will be brought to the attention of the Twentieth Session of the Codex Alimentarius Commission for adoption:

1. Proposed Draft Maximum Level for Aflatoxin M_1 in Milk at Step 5; paras. 81-83 and Appendix V, ALINORM 93/12.
2. Specifications for the Identity and Purity of Food Additives arising from the 37th Session of JECFA Recommended for Adoption as Codex Advisory Specifications, paras. 47-50 and Appendix III (Categories I and II), ALINORM 93/12.
3. Proposed Amendments to the International Numbering System, paras. 54-56 and Appendix IV, ALINORM 93/12.

PART B: REQUEST FOR COMMENTS AND INFORMATION

1. Proposed Amendments to the International Numbering System
   - para. 56, ALINORM 93/12

   The Committee reconfirmed that proposed amendments to the INS would be a standing agenda item for the CCFAC.

2. Proposed Amendments to the Inventory of Processing Aids
   - para. 59, ALINORM 93/12

   The Committee agreed to continue the revision of the inventory on the basis of government comments.

3. Consideration of Specifications Not Adopted as Codex Advisory Specifications.
   - para. 46 and Appendix VII, ALINORM 93/12

   The Committee agreed that government comments would be solicited on those specifications listed in the Appendix, especially as to whether or not these substances are presently used as food additives.

4. Proposed Draft Guideline Level for Aflatoxin B_1 in Supplementary Feedingstuffs for Milk Producing Animals- para. 90 and Appendix V, ALINORM 93/12

   The Committee decided to solicit government comments on the guideline level proposed.

5. Information and Proposals for Maximum Levels of Aflatoxins in Specific Foodstuffs- paras. 85 and 92, ALINORM 93/12

   The Committee agreed to solicit government comments and information on aflatoxins in specific foodstuffs such as milk powder, cheese, butter, pistachio and other nuts, copra, corn, maize, dried fruit, cotton seed, soya beans and derived products.

6. Information on Ochratoxin A- para. 93, ALINORM 93/12

   The Committee agreed to solicit specific information concerning ochratoxin A, as outlined in paragraph 93.

7. Identification of Additional Predatory Species of Fish as Related to the Codex Guideline Level for Total Mercury in Fish- para. 105, ALINORM 93/12

   The Committee agreed to seek additional information regarding the identification of predatory fish.

8. National Regulations. Background Levels and Source-Directed Measures in Regard to Cadmium and Lead in Foods- para. 108, ALINORM 93/12

   The Committee decided to postpone the elaboration of guideline levels for cadmium and lead in foods pending the submission of additional information.

9. Information Concerning PCBs. PBBs. and Tetrachlorobenzyltoluene in Foods- para. 113, ALINORM 93/12

   The Committee, while agreeing it was premature to set levels for the above contaminants at this time, decided to solicit additional Information.

10. Information Concerning Dioxins in Foods- para. 116, ALINORM 93/12

    The Committee, while expressing general support for source directed measures, decided to seek additional information.

11. Information Concerning Polycyclic Hydrocarbons. Hydrogen Cyanide, Phthalates and Ethyl Carbamate in Foods- para. 121, ALINORM 93/12

    The Committee decided to solicit additional information from governments with special emphasis given to source directed measures.

12. Proposals for the Priority Evaluation of Food Additives and Contaminants by JECFA- para. 135 and Appendix VI, ALINORM 93/12

    The Committee agreed to continue the solicitation of proposals for the evaluation of food additives and contaminants by JECFA.

13. Implications of Biotechnology International Food Standards and Codes of Practice- para. 140, ALINORM 93/12

The Committee agreed to solicit general information concerning the evaluation of food additives and other relevant substances produced through modern biotechnology as indicated in paragraph 140.

Governments and international organizations wishing to submit comments and information on the above matters are invited to do so no later than 1 October 1992 and as follows: Mrs. C.G.M. Klitsie, Ministry of Agriculture, Nature Management and Fisheries, P.O. Box 20401, 2500 E.K. The Hague, The Netherlands (Telex No. 32040 IAVI NL, Telefax No. 70.347.7552), with a copy to the Chief, Joint FAO/WHO Food Standards Programme, FA0, Via délie Terme di Caracalla, 00100 Rome, Italy.

SUMMARY AND CONCLUSIONS

The Twenty-fourth Session of the Codex Committee on Food Additives and Contaminants reached the following conclusions during its deliberations:

Matters for Consideration by the Commission:

- Agreed to advance the proposed draft **Maximum Level for Aflatoxin M_1 in Milk** for adoption by the 20th Session of the Commission at Step 5 (para. 83);
- Agreed to advance **Specifications for the Identity and Purity ? of Food Additives** arising from the 37th JECFA Session for adoption as **Codex Advisory Specifications** by the 20th Session of the Commission (para. 50);
- Agreed to advance **amendments to the International Numbering System for Food Additives** to the 20th Session of the Commission for endorsement (para. 56);
- Agreed to inform the Commission that the **Guideline Levels** adopted at its 18th Session at Step 8 refer to **total mercury** rather than **methyl mercury** (para. 104);
- Agreed to request the Executive Committee to provide advice as to the feasibility of making Codex recommendations for **source directed measures** regarding the contamination of food and other agricultural commodities (para. 137);

Other Matters of Interest to the Commission:

- Agreed to continue the elaboration of the proposed draft **General Standard for Food Additives** under specific terms of reference and principles for circulation and government comment prior to the 25th CCFAC (para. 31);
- Agreed to continue the elaboration of the proposed draft **Codex Procedures for Establishing a General Standard for Contaminants in Food** for circulation and comment prior to the 25th CCFAC (para. 78);
- Agreed to continue the consideration of **Specifications Not Adopted as Codex Advisory Specifications** through government comments and the Working Group on Specifications (paras. 44-46);
- Agreed to continue soliciting government comments and information regarding proposed amendments to the **International Numbering System for Food Additives** (para. 55);
- Agreed to continue the revision of the **Inventory of Processing Aids** through government comments (para. 59);
- Agreed to solicit government comments on a proposed draft guideline level for **Aflatoxin B_1 in supplementary feeding-stuffs for milk producing animals** (para. 90);
- Agreed to discontinue the establishment of a guideline level for **Aflatoxin M_1** in milk destined for use in baby foods (para. 84);
- Agreed to solicit additional government comment and information on the establishment of guideline levels for **aflatoxins in specific foodstuffs** (paras. 85, 92);

- Agreed to solicit additional information on the establishment of maximum levels **for Ochratoxin A,** while deciding to postpone the consideration of elaborating levels for **tricothecenes** (paras. 93-94);
- Agreed to propose specific terms of reference for an **Expert Consultation on Sampling Flans for Aflatoxins** while advising the Executive Committee of this procedure (paras. 98-99);
- Agreed to discontinue the **Working Group on Mycotoxins** for the present time (para. 101);
- Agreed to solicit information concerning the identification of additional predatory species of fish to which the **Codex Guideline Levels for Total Mercury in Fish apply** (para. 105);
- Agreed to continue gathering information on background levels, source-directed measures and national regulations on **cadmium and lead** in foods (para. 108);
- Agreed to solicit government comment and information on **PCBs, PBBs, tetrachlorobenzyltoluene** (para. 113), **dioxins** (para 116) and **polycyclic hydrocarbons, hydrogen cyanide, phthalates and ethyl** carbamate (para. 121) in foods;
- Proposed a list of food additives and contaminants for **priority evaluation by JECFA** (para. 135);
- Agreed to recommend the amendment of the Committee's **terms of reference** through the Codex Committee on General Principles (para. 136), and;
- Agreed to solicit additional information concerning the evaluation of food additives and other relevant substances produced through modern **biotechnology** (para. 140).

TABLE OF CONTENTS

LIST OF APPENDICES

OPENING OF THE SESSION (Agenda Item 1)

1. The Codex Committee on Food Additives and Contaminants held its 24th Session in The Hague, The Netherlands, from 23-28 March 1992, through the courtesy of the Government of The Netherlands. Mrs. C.G.M. Klitsie of The Netherlands acted as Chairman. The Session was attended by 214 participants, representing 39 member countries and 32 international organizations (see Appendix I for the List of Participants, including the Secretariat).

2. The State Secretary for Agriculture, Nature Management and Fisheries, Mr. J.D. Gabor, pointed out that the meeting would prove to have a significant impact on the Committee's future, especially as related to two items on the agenda, namely, the General Standard for Food Additives and General Principles for Contaminants. Over the past year a number of people had done much in preparation and the State Secretary thanked them for their efforts. He noted that the Committee's discussions were divided into separate areas of food additives and contaminants to give experts the opportunity to limit their presence to the days that the issues relevant to their field were being deliberated.

3. The State Secretary remarked that recent Codex developments showed a shift towards a horizontal approach which would affect the Committee's work. A horizontal approach that included non-standardized foods was important for trade liberalization. This trade liberalization should not impinge on the protection of public health.

4. The State Secretary reiterated consumer concerns regarding the approval of additives and other substances, as it often seemed as though there was a gap between what scientists considered safe and what consumers thought was safe. Consumer concerns remained an issue that had to be addressed. He also stressed that environmental issues and animal welfare needed to be taken into account as an example of challenges for both government authorities and international organizations.

5. The State Secretary ended by declaring the Twenty-fourth Session of the Codex Committee on Food Additives and Contaminants open.

ADOPTION OF THE AGENDA (Agenda Item 2)

6. The Committee adopted the Provisional Agenda (CX/FAC 92/1) as proposed. The Committee also agreed to discuss biotechnology as well as the possible amendment of the Committee's terms of reference under Agenda Item 17 (Other Business and Future Work). In order to facilitate discussions concerning the priority evaluation of compounds by JECFA and amendments to the INS system, the Committee appointed informal working groups to discuss these subjects under the Chairmanship of Mr. R. Top (The Netherlands) and Mr. L. Erwin (Australia), respectively.

APPOINTMENT OF RAPPORTEURS (Agenda Item 3)

7. The Committee agreed with the proposal of the Chairman to appoint Mr. R. Ronk (USA) as rapporteur.

MATTERS OF INTEREST ARISING FROM THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES (Agenda Item 4)

8. The Committee had before it document CX/FAC 92/2, which highlighted those matters of interest arising from the 19th Session of the Codex Alimentarius Commission and other Codex Committees.

9. The Secretariat reconfirmed that the Codex Committee on General Principles would reconsider the terms of reference of the general subject Committees based on a horizontal approach, as discussed at the Commission (paras. 61-62, ALINORM 91/40). The Committee agreed that its terms of reference would be discussed under Agenda Item 17, especially in relation to the proposed draft General Standard for Food Additives and the proposed draft Codex General Principles for Contaminants (see para. 136).

10. Regarding the implications of biotechnology on international food standards (Part F of CX/FAC 92/2), some delegations stressed the need for special consideration to be given to additives and other substances derived from modern biotechnological processes. An increasing number of these products were used in the industry and moving in trade, and the safety issue had to be carefully examined. The JECFA Secretariat indicated that certain biotechnologically produced enzymes had been evaluated by the 37th Session of JECFA. He stated that it would become necessary not only to examine the substance itself, but also to review the production process. The Secretariat also pointed out that consideration of these substances did not necessarily entail a general revision of its terms of reference, although additional explanation might be introduced to make them more explicit. The Committee agreed that this problem needed to be addressed immediately and that the Delegations of Australia, The Netherlands and the USA would prepare a discussion paper for consideration by the Committee under Agenda item 17 (see paras. 138-141).

11. The Secretariat informed the Committee of the comments of the Coordinating Committee for Asia at its Eighth Session, which had expressed its concern regarding the high levels set for radionuclides, especially with regard to the establishment of levels which were acceptable for long term exposure. The CCFAC was also requested to take into account the efforts made by exporting countries to reduce aflatoxin contamination, and accordingly set realistic maximum levels for the relevant commodities. The Committee agreed that the CCASIA discussions would be taken into account under the relevant agenda items.

CONSIDERATION OF THE SUMMARY OF THE REPORT OF THE THIRTY-NINTH MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (JECFA) (Agenda Item 5)

12. The Committee had before it Conference Room Document 1, which included the summary and conclusions of the Thirty-ninth meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), which was held in Rome from 3 to 12 February 1992, and an unedited version of an annex to the report on matters of interest to the CCFAC arising from the meeting. The full report will be published by WHO later this year. The room document was introduced by the Joint Secretariat of JECFA, Dr. J.L. Herrman (WHO) and Dr. J. Weatherwax (FAO).

13. Two substances that had been on the agenda, benzoin gum and polyglycerol esters of fatty acids, were not evaluated because information was not available. Sucrose esters of fatty acids were added for evaluation with sucroglycerides. Hydrocarbon waxes were evaluated under microcrystalline wax and paraffin wax, the substances for which specifications had been established. Chaconine was added for evaluation because it was chemically closely related to solanine and was normally also present in potatoes. Cyanogenic glycosides and solanine, which had been placed on the agenda as contaminants, were considered as naturally-occurring toxicants.

14. JECFA noted the concerns expressed at the FAO/WHO Conference on Food Standards, Chemicals in Food, and Food Trade regarding use of the terms "ADI (acceptable daily intake) not allocated" and "ADI not specified".

15. "ADI not allocated" could have different meanings depending upon the information available. In the present summary and conclusions JECFA tried to state the basis for not allocating ADIs. However, the reader must still refer to footnotes and to the report itself to gain a more complete understanding of the basis for a decision not to allocate an ADI.

16. With regard to "ADI not specified", the JECFA listed the uses that were considered in establishing the ADI, except where intake was so self-limiting that it was extremely unlikely that intake would ever exceed the level of toxicological concern, such as the case with the enzymes that were considered. When new uses that would significantly increase intake were envisaged, the food additive should be brought forward for re-evaluation by JECFA.

17. JECFA had difficulty evaluating the naturally-occurring toxicants because (1) data were not available to make definitive determinations about safety and (2) it was not clear why the CCFAC requested the evaluation and what it expected from JECFA. This presented particular problems for JECFA when evaluating naturally-occurring toxicants because the toxicity data available were often incomplete and the presence of these toxicants in food was difficult to control. The Secretariat also noted that a recommendation to reduce levels of toxicants in foods could result in changes in desirable properties such as pest resistance of plants. Moreover, a recommendation to reduce consumption of certain foods could also result in nutrient imbalances.

18. The Committee was advised that the FAO "Guide to JECFA Specifications" had been published as FAO Food and Nutrition Paper No. 5, Revision 2, and was now available. This document is the reference source for general methods, test solutions, etc., as used in all JECFA specifications.

19. The "Compendium, of JECFA Food Additive Specifications" was presently in press and was expected to be available after May 1992. It would be in two volumes totalling over 1,600 single pages and included all of the specifications elaborated from the 1st to the 37th meetings of JECFA (1956 to 1990). This initial printing would be only 1,000 copies, and it would therefore not be sent to Codex Contact Points. The specifications prepared at the recently concluded 39th meeting of JECFA were presently being finalized and would become the first addendum to the Compendium. These specifications would be sent to Codex Contact Points as usual.

20. The Committee was further advised that Revision 2 of the "Food Additives Data System", FAO Food and Nutrition Paper No. 30, was nearly complete and should be published in mid-1992. This would include data on substances evaluated through the 37th meeting of JECFA.

21. The Delegation of Switzerland noted that 1,000 copies of the Compendium would not be sufficient due to the widespread interest in this important document. The JECFA Secretariat pointed out that this initial printing was funded by ILSI and that further printings depended on availability of funds.

22. The Delegation of The Netherlands noted that several qualitative, rather than quantitative, statements were made in the summary and conclusions of the 39th JECFA. These included statements such as "should be limited to current uses" and "present uses not of toxicological concern". It was asked whether the report would make it clear

what uses were considered and the basis for the decisions. In this regard, it would not be appropriate to list these uses in the specifications only. The statement that lysozyme may be regarded as food was also not clear in the summary.

23. The JECFA Secretariat responded that care was taken at the meeting to ensure that the bases for the evaluations were as clear as possible in the report. Uses listed in the specifications would be included in the report. With regard to lysozyme, JECFA followed its guidelines that had been published in Annex III of WHO Environmental Health Criteria 70, "Principles for the Safety Assessment of Food Additives and Contaminants in Food". Lysozyme was placed in category (i), because it was an enzyme obtained from edible tissues of animals commonly used as foods.

24. The Delegation of the Philippines stated that it was convinced that as far as safety and performance were concerned, the product "processed Eucheuma seaweed" was like other carrageenans. He also stated that the results of a toxicity study and information on specifications of "processed Eucheuma seaweed" would be available for submission to JECFA in the near future. The Delegation requested that this substance be placed on the priority list for evaluation by JECFA.

25. The representative of Marinalg, speaking on behalf of the major seaweed processors, stated that confusion of names between "processed Eucheuma seaweed" and the Codex food additive, carrageenan, be avoided. These two distinct substances have different specifications. He indicated that they should be identified by different names to reflect this fact clearly for the benefit of regulatory authorities, the food industry, and the consumer.

26. The representative of the EC referring to the JECFA conclusion that current use levels up to 75 mg/1 of quinine in soft drinks were not of toxicological concern, noted that this substance was evaluated by the Scientific Committee for Food who concluded that levels up to 100 mg/1 could be used in soft drinks.

27. The JECFA Secretariat responded that the figure of 75 mg/1 was based upon information available to the JECFA, and it was the opinion of the Secretariat that it was not meant to exclude soft drinks that could contain higher levels of quinine.

28. The Committee requested clarification on this point from JECFA. The Delegation of the USA and the representative of the EC stated that they would provide information to JECFA on use levels. Other countries and organizations were invited to do the same.

CONSIDERATION OF THE PROPOSED DRAFT CODEX GENERAL STANDARD FOR FOOD ADDITIVES (Agenda Item 6)

29. The Committee had before it document CX/FAC 92/3, the progress report of the activities of the Working Group on the General Standard for Food Additives, and Conference Room Document 2, the report of the Working Group meeting held immediately prior to the current Session. The Working Group was chaired by Mr. R. Ronk (USA) with Ms. B. Fabech (Denmark) acting as Rapporteur. The Working Group participants included: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Malaysia, The Netherlands, New Zealand, Norway, Spain, Switzerland, Sweden, Thailand, UK, USA, CIAA, EC, ELC, FAO, IDF, IFAC, ILSI, IOCU, and WHO.

30. The Chairman reminded the Committee that the 23rd Session of the CCFAC had decided to prepare a horizontal General Standard for Food Additives (GSFA), and that there was a strong consensus on the necessity of a standard for additives independent of commodity standards. She stated that different views existed as to the principles and

presentation to be followed in elaborating the Standard. The Committee had decided that a Working Group would be formed in order to (a) establish General Principles for the GSFA, (b) elaborate a proposed Draft GSFA incorporating antioxidants and preservatives as a first step and (c) complete the document in time for governments to study and comment prior to its 24th Session (paras 30-37, ALINORM 91/12A). This procedure was also agreed to by the Commission at its 19th Session (para. 213, ALINORM 91/40).

31. There was general agreement that CCFAC should develop guidelines for translating JECFA ADIs into maximum levels of use; that the GSFA should cover food additive usages in all foods, whether standardized by Codex or not; as to the general format of the GSFA, some members agreed that it should be based on functional classes of additives, while other members were of the opinion that the standard should be based on food groups. There was generally no support for the establishment of priorities for the consideration of additives based on the ADI. It was agreed that, with regard to the horizontal approach and following Dr. Denner's recommendations, the format would be based on food additive functional classes. It was also agreed that the GSFA would be organized according to food categories. The Committee agreed with the Working Group that the GSFA would be drafted under the following principles:

1. The format of the standard will be based on the International Numbering System food additive functional class titles and also on food categories, initially using the CIAA food categorization system.
2. The standard will cover all foods, whether standardized or not.
3. All food additives listed in the INS list will be included, beginning with those evaluated by JECFA. Other food additives will be included only after JECFA evaluation.
4. The Danish Budget Method (DBM) will be used as a first screening method to help establish the maximum level of use; the Codex Guidelines for the Estimation of Food Additive Intake will also be used.
5. Food categories or individual food items where the use of food additives will not be allowed or will be restricted will be defined.
6. There will be no priority based on ADIs.

No conclusion was reached on the following questions:

- substances which might be regarded as foods or as food additives according to national legislations;
- additives defined as Generally Recognized As Safe (GRAS) or additives which had a long history of safe use and had not been evaluated by JECFA;
- how technological need and food manufacturing practice would be decided in the context of the GSFA.

32. The Chairman pointed out that the Committee should focus on the main issues and the areas where an agreement had been reached. The Delegation of Sweden, supported by Iceland, Mexico and Norway, was of the opinion that presentation of the standard by food categories would make it easier for consumers, industry and governments to use. Furthermore, presentation in this manner would facilitate discussion of the technological need for additives in different categories of foodstuffs. The observer of the EC indicated that it welcomed the horizontal approach based on food additive

functional classes and food categories which would allow for protection of the consumer, consideration of technological need, and would not mislead the consumer.

33. The Committee discussed the possibility of using the food categories list used by the CCFR which dealt with raw commodities, and agreed that it could not be adapted to the purpose of the GSFA. The JECFA Secretariat pointed out that the functional classes of additives used in the INS and the functional uses assigned by JECFA were different and that the Committee should exercise caution when assigning the class to which new substances belonged. The observer from IOCU welcomed the horizontal approach and was of the opinion that the GSFA should not facilitate a liberalization in the use of food additives. He also stated that technological need and nutritional implications should be given due consideration by the Committee. He also supported the decision of the Committee to prepare a list of foods where no additives could be used.

34. The Committee agreed that the preamble of the GSFA would contain the General Principles for the Use of Food Additives, as well as refer to certain sections of the Procedural Manual on the use of food additives. The Secretariat confirmed that the preparation of the GSFA, which had already been approved by the Commission, was consistent with the Committee's terms of reference. However, the Secretariat pointed out that "specific food items" might have to be modified to allow for the establishment of maximum levels for all foods (Agenda Item 17).

35. In conclusion, the Chairman stated that a GSFA would be prepared according to the principles agreed upon by the Committee (see para. 31), that its preamble would include the General Principles for the Use of Food Additives, and that it would be concerned in more detail with antioxidants and preservatives at this stage. She also re-emphasized that the horizontal approach should not lead to the liberalization of food additive usage. The Secretariat indicated that they would send circular letters asking for comments on the proposed draft GSFA and the CIAA list of food categories as to the food categories or food items in which antioxidants or preservatives were not used and where their use was restricted.

36. The Committee reinstated the Working Group-under the chairmanship of the USA, and congratulated this Delegation on the positive work which had been achieved since the last meeting of the Committee. The Committee agreed that the Working Group members were: Australia, Belgium, Canada, Denmark, France, Finland, Germany, Iceland, Malaysia, The Netherlands, New Zealand, Norway, Spain, Switzerland, Sweden, Thailand, UK, USA, CIAA, EC, ELC, FAO, IDF, IFAC, IFGMA, ILSI, IOCU, ITIC and WHO.

ENDORSEMENT AND/OR REVISION OF MAXIMUM LEVELS FOR FOOD ADDITIVES IN CODEX STANDARDS (Agenda Item 7 (a))

37. The Committee had before it CX/FAC 92/4-Part I. The Secretariat noted that as a result of Commission policy to emphasize horizontal aspects of Codex work, the elaboration of new individual commodity standards had been reduced significantly. Consequently, there were no maximum levels for food additives submitted for endorsement by the CCFAC.

ACTION REQUIRED BY THE CCFAC AS A RESULT OF CHANGES IN ADI STATUS (Agenda Item 7 (b))

38. The Committee had before it CX/FAC 92/4-Part II. The Secretariat informed the Committee of the changes in ADI status of food additives and other toxicological recommendations concerning contaminants proposed by JECFA at its 39th Session and

summarized in the document. Most of the changes proposed by JECFA did not require action by CCFAC. However, the Committee agreed that, during the development of the general food additive standard, such changes in status (e.g., from a numerical to a "not specified" ADI) be taken into account to raise or lower permitted use levels of these substances.

39. The Committee agreed that the endorsement for the use of potassium bromate in wheat flour be withdrawn and that the Commission as well as the Codex Committee on Cereals, Pulses and Legumes be informed.

40. JECFA had concluded that a level of up to 10 mg/kg hydrogen cyanide in the Codex Regional Standard for Edible Cassava Flour (CODEX STAN. 176-1991) was not associated with acute toxicity. The Committee agreed that information on the JECFA toxicological recommendation for cyanogenic glycosides be provided to the Codex Coordinating Committees for Africa and Asia as cassava was widely consumed in both regions.

41. The Delegation of Japan raised the concern that certain varieties of lima beans also contained high levels of cyanogenic glycosides. The JECFA Secretariat responded that these levels were not considered significant, especially after processing and cooking. However, JECFA did recognize the need to prepare guidelines for assuring the safe preparation and handling of such foods, particularly for countries where these foods had not been traditionally consumed.

42. In regard to naturally occurring toxicants having narrow margins of safety, several Delegations expressed the opinion that CCFAC considered possible actions to address the potential health hazards posed by such toxicants. The Committee agreed that this issue would be considered under discussions concerning the Codex General Principles for Contaminants (Agenda Item 13).

43. The representative from the ITIC noted that solanine and chaconine were acetylcholinesterase inhibitors as were organophosphorus pesticides. Therefore, the Committee agreed that the JECFA evaluation be brought to the attention of the Joint FAO/WHO Meeting on Pesticide Residues through the Codex Committee on Pesticide Residues when considering the evaluation of organophosphorus pesticide residues in commodities.

CONSIDERATION OF SPECIFICATIONS NOT ADOPTED AS CODEX ADVISORY SPECIFICATIONS (Agenda Item 8 (a))

44. The Committee had before it document CX/FAC 92/5 containing a list of JECFA specifications not adopted as Codex Advisory Specifications. This document had been prepared following the Working Group on Specifications review and comment on an overall list of such specifications. Four priority groups were designated in Tables A to D as follows: Table A - Codex specifications which had been superseded by more recent JECFA specifications; Table B - Non-tentative specifications prepared by the 39th JECFA; Table C - JECFA specifications found suitable by CCFAC but not formally adopted as Codex specifications, or substances previously postponed and now eligible for CCFAC review; and Table D - Older JECFA specifications which were never reviewed or were not reviewed under the current system.

45. The Committee agreed with the Working Group recommendation that the specifications listed in Tables A, B and C, totalling 56 compounds, be reviewed by the Working Group for possible endorsement as Codex Advisory Specifications at the Twenty-fifth session of the CCFAC in 1993. The Chairman of the Working Group

reminded the Committee that propyl gallate had been endorsed as a Codex Advisory Specification at the 20th CCFAC, but by clerical error had not been included in the list adopted by the Commission. The Committee therefore agreed to forward the specification for propyl gallate as well other specifications from Tables A, B and C to the Commission after they had been considered and deemed suitable for adoption as Codex Advisory Specifications by the 25th CCFAC.

46. The Committee also agreed with the Working Group recommendation that the specifications listed in Table D (Appendix VII) would be circulated prior to the 25th Session of the CCFAC and comments requested on the specifications, as well as whether or not these substances were presently used as food additives. This information would determine whether these substances were referred to JECFA for revision of specifications or were considered by CCFAC in 1993 for adoption as Codex Advisory Specifications.

CONSIDERATION OF SPECIFICATIONS ARISING FROM THE 37TH JECFA MEETING (Agenda Item 8 (b)

47. The Committee had before it the Report of the Working Group on Specifications (Conference Room Document 3). The Working Group was chaired by Mr. D.F. Dodgen (USA) and Mrs. H. Wallin (Finland) served as Rapporteur.

48. The Working Group reviewed all of the specifications prepared by the 37th meeting of JECFA, except those designated by JECFA as "tentative". These specifications would be published as part of the Compendium of JECFA Food Additive Specifications, presently in press. The Working Group also considered the comments regarding these specifications received in response to CL 1991/22-FAC.

49. During the Working Group review, the substances were divided into four categories: I - Recommended for Adoption as Codex Advisory Specifications without changes; II - Recommended for Adoption with editorial or other minor changes; III - Referred to JECFA for further review because of necessary substantive changes; and IV - Substances on the agenda of a forthcoming meeting of JECFA.

50. The Committee agreed to refer the substances in Categories I and II (see Appendix III) to the Commission for adoption as Codex Advisory Specifications. The Committee also agreed with the Working Group recommendation that in the future those specifications designated 'tentative' by JECFA would be circulated for comment with the full specifications. Any comments received would be forwarded to JECFA.

51. In connection with specifications for two α-amylase enzymes referred back to JECFA (see Appendix III, Category III), the Committee agreed with the Working Group recommendation to ask JECFA to review the degree to which strain classification and/or identification was needed in specifications for enzymes from microbial sources. The Committee further agreed with the Working Group recommendation that JECFA should establish a uniform policy on significant figures used in numerical limits.

52. The Committee agreed with the Working Group recommendation that JECFA considered a general review of arsenic, heavy metals and lead limits used in specifications. The Delegation from Germany pointed out that most chemically produced food additives had heavy metal levels below 5 mg/kg due to modern production techniques.

53. The Committee expressed its appreciation for the efforts of the Working Group and reinstated it under the chairmanship of Mr. D. Dodgen (USA). The following

countries and organizations were invited to participate in the reinstated group: AMFEP, Australia, Canada, Denmark, EC, Finland, Germany, IBC, IFAC, IFG, ILSI, IOCU, IPPA, Italy, ITIC, Marinalg/Biopolymer, The Netherlands, Philippines, Switzerland, UK and USA.

PROPOSED AMENDMENTS TO THE INTERNATIONAL NUMBERING SYSTEM FOR FOOD ADDITIVES (Agenda Item 9)

54. The Committee had before it CX/FAC 92/6 in which comments from the USA were summarized. The Secretariat reported that the International Numbering System (INS), as adopted by the Commission (paras. 205-206, ALINORM 91/40), had been incorporated in Volume I of the Codex Alimentarius. The informal Working Group on the INS, chaired by the Delegation of Australia, reviewed the proposed amendments to the INS, as submitted in response to CL 1991/10-FAC. The Committee agreed to the following:

- because an ADI had been allocated by JECFA, sucralose should be included in the INS as "955-sucralose (trichlorogalactosucrose) Sweetener".
- the entry for petroleum wax (905c) would include two subcategories: 905c(i) for microcrystalline wax and 905c(ii) paraffin wax as glazing agents.
- the entry for saffron (164) would be deleted from the INS.

55. The Committee also agreed that comments would be solicited from member states to obtain information on the following:

- whether pure furcellaran was still in use, and if so, whether there was a need for separate identification of carrageenans and furcellaran, (i.e. 407a and 407b), respectively;
- whether there was a need for separate identification of natural and synthetically-derived carotenes in the INS;
- whether current uses existed to justify the retention of the entry for 152 carbon black (channel black); and
- whether the use of the INS in data base applications, which would require restricting the INS system to numbers only, would have any implications in its intended use as a labeling document.

56. The Committee reconfirmed that proposed amendments to the INS would be a standing agenda item for the CCFAC, and that the above amendments would be forwarded to the 20th Session of the Commission for adoption (see Appendix IV).

REVISED INVENTORY OF PROCESSING AIDS (Agenda Item 10)

57. The Committee had before it document CX/FAC 92/7 (Revised Inventory of Processing Aids) and Conference Room Document 11 in which comments from the USA, Finland and Rhône Poulenc were summarized. The Committee was reminded that the Inventory of Processing Aids was now included in Volume I of the Codex Alimentarius.

58. The Delegation of the USA stated that document CX/FAC 92/7 contained information as had been agreed to by the Committee at its 22nd and 23rd Sessions. He said that substances added since the last revision in 1989 were marked with an asterisk (*). He also stated that the USA was willing to continue updating the inventory on the basis of comments submitted at the present session in response to CL 1991/10-FAC.

The Committee agreed to retain the columns "residue level, mg/kg" and "interaction w/food" because the information was felt to be important. However, the Committee noted that blank spaces in these columns did not mean that no residues were found or that no interactions occurred.

59. The Committee agreed to continue the revision of the inventory on the basis of government comments on document CX/FAC 92/7 and any other comments submitted before the next CCFAC session. The Chairman thanked Mr. D.F. Dodgen for his contributions in preparing this Agenda Item.

REPORT OF THE JOINT UNEP/FAO/WHO FOOD CONTAMINATION MONITORING AND ASSESSMENT PROGRAMME (GEMS/FOOD) (Agenda Item 11)

60. The Committee had before it document CX/FAC 92/8, which highlighted progress of the GEMS/Food in providing global information on levels and trends of contaminants in foods and their significance with regard to public health. During 1991, GEMS/Food published a summary of data for the period 1986-1988 (WHO/HPP/FOS 91.4), and a report on analytical quality assurance studies carried out in 1989 and 1990 (WHO/HPP/FOS 91.2). In addition, a meeting of the GEMS/Food Programme Management Committee was convened in November 1991 in Geneva. Among various recommendations, this Committee agreed to include "assessment" in the title of the programme to reflect current practice. In this regard, two assessment documents based on GEMS/Food data would be published during 1992.

61. To improve the reliability of the data received, analytical quality assurance studies for organochlorine compounds and aflatoxins had been carried out in 1991. A heavy metal study was being carried out in 1992. In addition, GEMS/Food would hold training courses in analytical quality assurance for participating institutions in Central and Latin America and the Caribbean. In order to obtain valid and comparable data on intakes of contaminants throughout the world, GEMS/Food would promote efforts to undertake total diet studies, especially in countries where monitoring programmes had not yet been established.

62. In Europe, GEMS/Food would be greatly expanded to meet the requirements of certain EC directives indirectly related to food contamination monitoring which had relevance for all countries of Europe trading in food. GEMS/Food was also involved in the implementation of a number of European projects related to food safety and the environment. It was hoped that similar initiatives could be undertaken in other regions as well.

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

63. The Committee had before it CX/FAC 92/9. The Secretariat noted that as a result of Commission policy to emphasize horizontal aspects of Codex work, the elaboration of new maximum levels for contaminants had been reduced significantly. Consequently there were no maximum levels for contaminants submitted for endorsement by CCFAC.

PROPOSED DRAFT CODEX GENERAL PRINCIPLES FOR CONTAMINANTS (Agenda Item 13)

64. The Committee had before it document CX/FAC 92/10, prepared by the Delegations of Denmark and The Netherlands, as well as government comments summarized in CX/FAC 92/10-Add. 1 and Conference Room Document 5.

65. The Delegations of The Netherlands and Denmark introduced document CX/FAC 92/10 and reminded the Committee of the discussion on this item in the CCFAC (paras. 22, 27-28, 157, ALINORM 91/12A) and at the 19th Commission Session (para. 222, ALINORM 91/40). The purpose of the paper was to provide, as a first step, general principles and procedures for the internal use of the Committee regarding the establishment of guideline or maximum levels for contaminants within the Codex framework. The authors briefly summarized the document, which was based in part on the earlier work of Dr. Mollerihauer. They stated that it was important to realize that the origin of the substance defined it as a contaminant, not the substance as such. A classification of contaminants was presented in the paper based on sources. This source orientation enabled consideration of control measures.

66. The Netherlands and Denmark emphasized the importance of taking into account CCFAC work in encouraging and recognizing the importance of reducing environmental pollution at its source as one of the first steps in controlling contaminants in food. The authors, in referring to Annex IV of CX/FAC 92/10, stated that the scheme was only given as an example of a decision tree approach. The Committee would use the toxicological evaluations of JECFA as the basis for further consideration by the CCFAC.

67. Several delegations praised and supported the document and expressed their appreciation to the delegations of Denmark and The Netherlands and, particularly, to the authors for its preparation.

68. Extensive discussion of the document revealed a number of areas which required further clarification. These included the role of GMP in establishing levels, and the meaning and application of guideline levels.

69. The Committee agreed that the horizontal approach for establishing maximum or guideline levels for contaminants in standardized and non-standardized foods was, in principle, appropriate and should be pursued. However, a more complete description and procedure concerning the horizontal approach should be elaborated.

70. The Committee agreed that, in making decisions based on the horizontal approach, consideration should be given to the following criteria, presented in the document, as well as other possible criteria:

- Toxicological Criteria
  - (a) identification of the toxic substance
  - (b) information on acute and chronic toxicity
  - (c) possible relation to other toxic substances in food
  - (d) stability in food
  - (e) metabolism by humans and animals, as appropriate
- Analytical Criteria
  - (a) reliable qualitative and quantitative analytical data
  - (b) representative sampling procedures
- Intake Criteria
  - (a) presence in foods of dietary significance
  - (b) presence in foods widely consumed
  - (c) intake data for average and most exposed consumers

– Fair Trade Criteria

(a) problems in international trade
(b) development of national regulations
(c) foods concerned moving in international trade

71. The Committee agreed that, as far as possible, CCFAC should identify and suggest source-directed technological measures to prevent or reduce contamination, both for industrial contaminants and for biological and naturally occurring toxins.

72. The Committee agreed that collaboration with UNEP and other international organizations involved in environmental programmes aimed at the reduction of pollution and contamination of food should be developed to promote the safety and quality of food with respect to contaminants. In taking this decision, the Committee noted that recommendations for certain source-directed measures are beyond the mandate of the Commission.

73. The Committee agreed that education programmes for consumers at the national level could be effective instruments to reduce or eliminate dietary exposure to certain contaminants.

74. The Committee agreed that the Commission should be requested to revise the CCFAC Terms of Reference to include naturally occurring toxins. However, the Committee recognized that naturally occurring toxins inherent in food may have to be considered differently than other toxins.

75. The Committee agreed that, in principle, maximum levels for contaminants should be established, but recognized that, for certain contaminants, interim guideline levels could be used for specific purposes until, for example, source-directed measures could be devised to reduce contaminant levels.

76. However, the Committee could not agree on the interpretation of guideline levels, with some delegations preferring that guideline levels be set at the intended maximum levels until contaminant levels in food could be reduced to meet them. In this regard, the Committee noted that under the current draft Agreement on Sanitary and Phytosanitary Barriers to Trade, GATT may interpret guideline levels as mandatory. It was also noted that existing guideline levels for radio-nuclides and methylmercury were often applied as if they were mandatory levels.

77. Many delegations considered guideline levels as those levels which were feasible under current GAPs and/or GMPs, but which would eventually be replaced by maximum levels as improved prevention and control measures were developed. This issue was discussed further in relation to guideline levels for aflatoxin contamination in supplementary animal feed (see Agenda Item 14).

78. With the concurrence of the Delegations of Denmark and The Netherlands, the Committee agreed that those delegations would prepare a document detailing procedures for establishing a general standard for contaminants in food consistent with above principles for circulation and government comment prior to the next session of the CCFAC.

MYCOTOXINS IN FOOD AND FEED (Agenda Item 14)

79. The Committee had before it documents CX/FAC 92/11-Parts I, II, III, IV, V and Conference Room Document 9, which summarized Government comments, the Report of the Working Group on Mycotoxins (Conference Room Document 4) and the proposed

terms of reference for the consultation on sampling plans for aflatoxins (Conference Room Document 16). The Secretariat also provided information on discussions held concerning this issue at the recent CCASIA meeting.

80. The Chairman of the Working Group on Mycotoxins introduced the Working Group report, and stated that the Working Group supported the horizontal approach for the setting of guideline or maximum levels for mycotoxins. The Working Group discussed the proposed maximum level for aflatoxin M_1 in milk, as well as a maximum level for aflatoxin B_1 in supplementary feeding stuffs for milk producing animals, and there was strong support for proceeding with a maximum level. The Working Group noted that there was a need to gather more information about aflatoxins in specific foodstuffs and ochratoxin A in general.

PROPOSED DRAFT GUIDELINE LEVELS FOR AFLATOXIN M_1 IN MILK (Agenda Item 14 (a))

81. A majority of delegations agreed with the Working Group recommendation to proceed with the proposed maximum level of 0.05 g/kg for aflatoxin M_1 in milk, as supported by government comments submitted at Step 3 in response to CL 1991/10-FAC.

82. The Delegation of the USA explained that in their opinion 0.5 µg/kg was adequate for aflatoxin M_1 in milk to protect the consumer and that GAP could not guarantee aflatoxin levels in crops that were low enough to result in levels in milk meeting the proposed 0.05 *µ*g/kg aflatoxin M_1 in milk. This was noted especially in tropical areas where problems could occur in crops produced under wet weather conditions. However, the majority of the Delegations supported the proposed maximum level, and noted that this level could be easily maintained by controlling the feed.

83. The Committee decided on a maximum level of 0.05 *µ*g/kg for aflatoxin M_1 in liquid milk as such and agreed to forward this value to the 20th Session of the Commission for adoption at Step 5 (See Appendix V). The countries of Malaysia, Mexico, Philippines, Thailand and USA reserved their position.

84. The Committee also decided to discontinue work on aflatoxin M_1 in milk destined for baby foods. The Delegation of Egypt stated aflatoxin M_1 should not be present in milk destined for use in baby foods.

85. The Committee agreed to send a CL to gather information on the occurrence of aflatoxin M_1 and suggestions for maximum levels in milk products like milk powder, cheese and butter.

PROPOSED DRAFT MAXIMUM LEVELS FOR AFLATOXIN B_1 IN SUPPLEMENTARY FEEDING STUFFS FOR MILK PRODUCING ANIMALS (Agenda Item 14 (b))

86. The proposed draft maximum level of [5 µg/kg] for aflatoxin B_1 in supplementary feeding stuffs for milk producing animals was circulated to Governments for comments at Step 3 in CL 1991/10-FAC.

87. The Committee noted the Working Group proposal to proceed with the maximum level of [5 *µ*g/kg]. Several countries supported the proposed level of [5 *µ*g/kg] aflatoxin B_1, as an aflatoxin M_1 limit of 0.05 µg/kg in milk was easily achievable with such a limit.

88. Several delegations noted that the [5 µg/kg] level was unrealistically low. In this regard, the Committee was reminded that the Codex Coordinating Committee for Asia reiterated its position that Codex consider the establishment of realistic and practical limits, especially in view of great efforts made by countries in the region to reduce

contamination. Other delegations informed the Committee that several programmes were in place to control mould infection and the presence of aflatoxin in crops and feed. However, especially in countries with warm and humid growing seasons, the level of [5 µg/kg] could not be adequately controlled. The delegation of Malaysia, as supported by several other delegations, proposed a level of [20 *µ*g/kg], and noted that present analytical chemical methods were not adequate to control at the [5 µg/kg] aflatoxin B_1 level, and the methods became even more inadequate at lower detection limits.

89. The representative of the AOAC offered to prepare a more detailed document about methods of analysis for aflatoxins and include their coefficients of variations and ways to improve the results from these methods.

90. The Committee generally supported the principle of setting limits for aflatoxin B_1 in supplementary feeding stuffs for milk producing animals. However, the Committee did not come to an agreement as to the value itself. The Committee decided to ask governments for comments on a proposed draft guideline level of [5 *µ*g/kg] for aflatoxin B_1 in supplementary feeding stuffs for milk producing animals with the understanding that the interim definition of "guideline level" adopted by the Commission would be included (see Appendix V). It was also understood that the square brackets indicated the provisional status of the guideline level.

PROPOSED DRAFT MAXIMUM LEVELS FOR AFLATOXINS IN SPECIFIC FOODSTUFFS (Agenda Item 14 (c))

91. The JECFA Secretariat reminded the Committee that JECFA had recommended that aflatoxin levels should be kept as low as technologically feasible while being consistent with maintaining an adequate food supply. Furthermore, he indicated that JECFA is willing to undertake a risk assessment of aflatoxins M_1 and B_1, taking into account epidemiological and animal data, when new and significant information on these items became available.

92. The Committee agreed with the Working Group recommendation to collect information on aflatoxin levels in those commodities where contamination may occur, e.g. pistachio and other nuts, copra, corn, maize, dried fruit, cotton seed, soya beans and derived products.

PROPOSED DRAFT MAXIMUM LEVELS FOR OCHRATOXIN A AND THE TRICHOTHECENE GROUP IN FOODS (Agenda Item 14 (d))

93. The Committee agreed with the recommendation of the Working Group to collect more information on ochratoxin A, especially on the following points:

- Do problems in international trade exist or are there only regional problems (colder climate zones)?
- Is it possible to avoid or reduce ochratoxin A contamination by Good Agricultural Practice?
- Are reliable methods of analysis available to perform surveys on contamination levels?

94. The Committee noted that GEMS/Food would request data on ochratoxin A in their new data collection cycle and that ochratoxin A was on the priority list for evaluation by JECFA (see Agenda Item 16). The Committee agreed to postpone the consideration of tricothecenes at this time in view of the lack of information.

SAMPLING PLANS FOR AFLATOXINS (Agenda Item 14 (e))

95. The Chairman noted that there was support for convening an expert consultation on sampling plans for aflatoxins. The Delegation of The Netherlands reiterated comments of the Dutch government on sampling plans for aflatoxins (nuts, cereals, dried fruit and spices) and stated that it was very important to have terms of reference for the expert consultation. This should include the required operating characteristics of the sampling plan, and the statistical model of the aflatoxin contamination of the commodity.

96. The Delegation of the USA also emphasized the need for clear but general terms of reference for the consultation, to avoid assigning specific and restrictive tasks to the experts. The Delegation of the USA stated that they hoped that these terms of reference would enable the consultation to advise the CCFAC on the consequences of the options it selected and the implications of these options on trade.

97. The Committee understood that the Consultation would include commodity and statistical specialists having appropriate expertise in contaminant control in both export and import situations, and that the range of confidence levels the experts would suggest would be within the range of levels used worldwide for the control of these types of contaminants. The Consultation would clearly have available to it any approaches to aflatoxin control which have been suggested by this Committee and the CCCPL, including the complete approaches suggested by The Netherlands and the USA.

98. The Committee agreed to propose the following general terms of reference for the expert consultation:

(a) To examine the scientific basis of sampling plans and procedures for aflatoxins, and to establish the mathematical model(s) of the distribution of aflatoxins in the commodities on which the sampling plan is to be based;

(b) To establish guidelines for the development of sampling plans, i.e. the required operating characteristics of the sampling plan (specified acceptance and rejection probabilities for commodity lots containing a certain level of aflatoxin);

(c) To specify the type of commodity and its characteristics as it moved through international trade (i.e. intermediate products such as corn, raw peanuts, corn meal, processed peanut products, etc.); and to specify parameters needed in the mathematical model(s) which described the distribution of aflatoxin in the commodity;

(d) To evaluate the effects of sample collection and sample preparation procedures on the overall results of the analysis; specifications should include representative samples, representative sub-samples and appropriate preparation of homogeneous composites;

(e) To indicate, as far as possible, the percentage of the commodity which would be rejected after harvest when the proposed sampling plan is applied;

(f) To include recommendations for sampling plans used in export control as well as import control;

(g) To consider specific sampling problems submitted to it by the Commission and by any of its Committees.

99. The Committee also agreed to advise the Executive Committee of this procedure, while noting that sources of funding for the consultation still needed to be found.

REPORT OF THE WORKING GROUP ON MYCOTOXINS (Agenda item 14 (f))

100. The Chairman concluded that all the items from the Working Group report had been dealt with by the Committee.

101. The Committee decided that since all delegations should be present for the discussion on mycotoxins, the Working Group would not meet next year. It may be appropriate to reinstate the Working Group in future years.

INDUSTRIAL AND ENVIRONMENTAL CONTAMINANTS IN FOOD (Agenda Item 15)

IDENTIFICATION OF ADDITIONAL PREDATORY SPECIES OF FISH AS RELATED TO THE CODEX GUIDELINE LEVELS FOR METHYLMERCURKY IN FISH (Agrnda item 15(a))

102. The Committee had before it document CX/FAC 92/12-Part I and Conference Room Document 12, which summarized government comments submitted in response to CL 1991/10-FAC concerning the identification of additional predatory species of fish as related to the Codex guideline levels for methylmercury in fish. Comments were received from Denmark, Finland, Norway Poland, Sweden, Thailand, UK and the USA.

103. The Secretariat informed the Committee that the 19th Session of the Commission had adopted two guideline levels for methylmercury in fish at Step 8, as contained in Appendix VIII of ALINORM 91/12. The adoption was made with the understanding that the guidelines would be kept under review by the CCFAC and the Codex Committee on Fish and Fishery Products, especially with respect to the identification of predatory species of fish for which the higher guideline levels were assigned.

104. The Committee agreed to inform the Commission and the Codex Committee on Fish and Fishery Products that the guideline levels adopted at Step 8 referred to total mercury rather than methyl mercury. Therefore, the guideline levels should be 0.5 mg/kg (non-predatory) and 1 mg/kg (predatory) for total mercury.

105. The Committee, while noting that the proposed guidelines were for finfish only, agreed that the identification of predatory fish was still required and decided to seek additional information.

PROPOSED DRAFT GUIDELINE LEVELS FOR CADMIUM AND LEAD IN FOODS (Agenda Item 15 (b))

106. The Committee had before it document CX/FAC 92/12-Part II and Conference Room Document 7, which summarized Government comments submitted in response to CL 1991/10-FAC. Comments were received from Denmark, Italy, Japan, The Netherlands, Poland, Sweden, Thailand, UK and USA. The Delegation of Poland also explained that due to a pending review of its national food legislation, the Committee would be provided with relevant information on new regulations and available data prior to the next CCFAC meeting.

107. The Secretariat informed the Committee that the 19th Session of the Commission had temporarily endorsed (paras. 347-348, ALINORM 91/40) guideline levels for arsenic, mercury and lead in cereals, pulses and legumes at Step 5 as proposed by the Codex Committee on Cereals, Pulses and Legumes (para 24,

ALINORM 91/29) and postponed the endorsement of cadmium. In addition, it was agreed that the CCCPL should provide information (see CL 1991/30-CPL) concerning the need for the establishment of levels for arsenic and mercury as well as supporting data and an indication of the stage of processing for the proposed levels for lead and cadmium, as requested by the CCFAC.

108. The Committee agreed to continue gathering information about background levels, source directed measures and national regulations. The elimination of the use of lead-soldered cans, lead-containing capsules on wine bottles, and cadmium in fertilizers were examples of source-directed measures. The Committee was aware that other international bodies (e.g. UNEP, WHO), dealt with air and water contamination, and that these organizations played an important role in surveying the human intake of contaminants such as cadmium and lead.

109. The Committee decided that the elaboration of guideline levels for cadmium and lead in specific foods should be postponed until additional information from governments, JECFA and the CCCPL was obtained.

PROPOSED DRAFT GUIDELINE TEVELS FOR PCBs. PBBs AND TETRACHLOROBENZYLTOLUENE IN SPECIFIC FOODSTUFFS (Agenda Item 15 (c))

110. The Committee had before it document CX/FAC 92/12-Part III, as well as Conference Room Document 6 and 10, presenting the comments received from the governments of Denmark, Italy, The Netherlands, Poland, Sweden, Thailand, UK and USA in reply to CL 1991/10-FAC.

111. The Delegation of The Netherlands informed the Committee that their national legislation set maximum limits for PCBs in milk and fishery products and that certain dietary recommendations had been defined, but that the main objective of their global policy was to reduce sources of contamination. They pointed out that the effects of some PCB congeners were similar to those of dioxins and that further toxicological evaluation of these compounds would be needed. The Delegations of Germany, Sweden and the UK also indicated that they were implementing surveys on PCBs and congeners.

112. The JECFA Secretariat indicated that the International Programme on Chemical Safety is preparing Environmental Health Criteria documents on PCBs and PBBs. IPCS was collaborating with the WHO Regional Office for Europe on toxic equivalency factors for dioxins and coplaner PCBs. IPCS publications include WHO Environmental Health Criteria No. 88 on Dioxins. He also pointed out that it was a long term process to provide guidance for such environmental contaminants in air, water and food.

113. Several delegations expressed their support for source directed measures to reduce contamination by PCBs, PBBs and tetrachlorobenzyltoluene. The Committee agreed that it was premature to set levels for these contaminants at this stage, and that additional information would be requested from governments for consideration by the Committee at its next session.

DIOXINS IN FOODS (Agenda item 15 (d))

114. The Committee had before it document CX/FAC 92/12-Part IV and Conference Room Document 13, presenting the comments of Denmark, France, Italy, The Netherlands, Sweden, Thailand and UK in reply to CL 1991/10-FAC.

115. The Delegations of Canada, Finland, Germany, Switzerland and the UK indicated that they had implemented national surveys of dioxin contamination in food, especially in

milk, meat, eggs and fish. The results will be communicated to the next session of the Committee. The Delegation of The Netherlands pointed out that consideration should also be given to contamination of fish oil.

116. The Committee agreed that there was general support for source-directed measures (e.g. paper bleaching, waste incineration, etc.) to reduce contamination by dioxins in foods, and that additional information would be requested before its next session.

POLY-CYCLIC AROMATIC HYDROCARBONS (E.G. BENZO-(A)-PYRENE). HYDROGEN CYANIDE. PHTHALATES (E.G. DEHP) AND ETHYL CARBAMATE IN FOODS (Agenda Item 15 (e))

117. The Committee had before it document CX/FAC 92/12-Part V and Conference Room Documents 8 and 14, presenting the comments of Denmark, Italy, The Netherlands, Poland, Sweden, Thailand, UK and USA in reply to CL 1991/10-FAC.

118. The JECFA Secretariat informed the Committee that polycyclic aromatic hydrocarbons are on the JECFA priority list, and that hydrogen cyanide was included in the JECFA evaluation of cyanogenic glycosides.

119. The Delegation of The Netherlands noted that it was necessary to have more information on the, use of phthalates, which seemed to be decreasing. More information was also needed on the toxicology of benzo(a)pyrene. The observer from IFMA informed the Committee that adequate processing methods, which included improving the drying process, could prevent contamination of coconut oil with PAH.

120. The Delegation of Czechoslovakia stated that in his country phthalate content in fruits and vegetables were in the range of 0.05 to 1.0 mg/kg.

121. The Committee decided that additional information would be requested from governments with special attention given to source-directed measures to reduce levels of these contaminants in food.

122. The Committee also agreed to invite comments from the Coordinating Committees for Asia and Africa on hydrogen cyanide to gather additional data and information.

PROPOSALS FOR THE PRIORITY EVALUATION OF FOOD ADDITIVES AND CONTAMINANTS BY JECFA (Agenda Item 16)

123. The Committee had before it CX/FAC 92/13, which summarized government proposals for priority evaluation, as well as Conference Room Document 15, the report of the Working Group on Priorities. The Working Group had met to consider the status of the substances listed for priority attention at the 23rd Session of CCFAC and to consider new additions to the priority list. Mr R. Top of The Netherlands chaired the Working Group.

124. It was emphasized that when a government made a proposal for addition to the priority list it accepted primary responsibility for ensuring that data were submitted for evaluation by JECFA. The JECFA Secretariat would solicit any additional data that may be available in the announcement of the JECFA meeting.

125. The following substances that had been on the previous priority list (Appendix VII of ALINORM 91/12A) had been placed on the agenda of the forty-first meeting of JECFA, which would be held in February of 1993: konjac flour; B-cyclodextrin; 1,3-dichloro-2-propanol; 3-chloro-l,2-propanediol; lead; and cadmium. Commitments had

been made to provide information on these substances. The substances adipic acid, carrageenans (immunological aspects), sucroseoctaacetate and patent blue V had been tentatively placed on the forty-first JECFA agenda pending early confirmation from Germany that a commitment would be made to submit data. If no commitment was received, these compounds would be removed from the agenda.

126. Fumaric acid and specifications for nitrogen, pectins, and sorbitan tristearate were considered at recent meetings of JECFA. These substances were, therefore, removed from the priority list.

127. Toxicity studies were currently underway on nitrite, nitrate, nitrosamines and ethyl carbamate. Therefore, the Committee decided that these substances should be maintained on the priority list for evaluation by JECFA in the future.

128. The Committee decided that it was premature to ask JECFA to evaluate the phthalates, trichothecenes, polycyclic aromatic hydrocarbons, and paralytic shellfish toxins because (1) more information was required on the specific substances within these categories that were of particular concern and (2) their evaluation should await the elaboration of general principles for contaminants with the expectation that CCFAC would decide how to deal with such substances. The Committee agreed that these substances would remain on the priority list.

129. The Committee agreed that dioxins would remain on the priority list pending the submission of additional information.

130. The Committee decided to leave the ammoniation process on the priority list for later evaluation by JECFA since it was developed as a process to reduce aflatoxin levels in conjunction with animal feeds rather than human food.

131. The Delegation of Finland requested that disodium 5'-guanylate and disodium 5'-inosinate (flavour enhancers), which had been allocated "ADIs not specified" by JECFA, be re-evaluated by JECFA on the basis of increased use since the last evaluation. These substances had been placed on the agenda of the Forty-first meeting of JECFA with a commitment by Finland to submit relevant data.

132. The Delegation of Denmark requested an evaluation of carbamide. Denmark would be able to provide data soon, so this substance was placed on the agenda of the forty-first meeting of JECFA.

133. The Delegations of Denmark and the UK requested that ochratoxin A be re-evaluated. This request was based upon new information that was not available to JECFA when this substance was evaluated at its thirty-seventh meeting. This substance was placed on the priority list, and the two delegations were requested to provide more specific information to the JECFA Secretariat.

134. The Committee recognized that special problems were associated with the submission of data on contaminants as opposed to food additives. In regard to food additives, governments had a primary responsibility for providing data on food additives, especially when it requested the evaluation. However, with regard to contaminants, in view of the large volume of information available and special problems associated with their presence in different areas of the world, care should be taken to make certain that all data available to governments and organizations were submitted for the evaluation. With regard to the forty-first meeting of JECFA, governments and organizations were invited to submit validated summaries of data on cadmium and lead to the JECFA Secretariat. The deadline established by JECFA for all data submissions is 15 July 1992.

135. The Committee agreed to the priority list elaborated by the Working Group, attached to this report as Appendix VI.

OTHER BUSINESS AND FUTURE WORK (Agenda Item 17)

Revised Terms of Reference

136. The Committee agreed to recommend to the Codex Committee on General Principles to amend paragraph (a) of its terms of reference in the Procedural Manual as follows:

> (a) to endorse or establish permitted maximum or guideline levels for individual food additives, for contaminants (including environmental contaminants) and for naturally occurring toxicants in all foodstuffs and animal feeds.

137. The Committee also agreed to request that the Executive Committee provide advice as to the feasibility of making Codex recommendations for source directed measures regarding the contamination of food and other agricultural commodities.

Implications of Biotechnology on International Food Standards and Codes of Practice

138. The Committee had before it Conference Room Document 17, prepared by the Delegations of Australia, the Netherlands and the USA (see para. 10).

139. The WHO Secretariat reminded the Committee that the Commission had endorsed the conclusions and recommendations of the Joint FAO/WHO Consultation on Strategies for Assessing the Safety of Foods Produced by Biotechnology (ISBN 92-4-156145-9) while stressing the need to provide consumers with sound, scientifically based information which explained the application of biotechnology in food production and processing while clarifying the safety issues. The Commission had also agreed that "General" subject committees should discuss issues related to biotechnology within the context of their terms of reference.

140. The Committee concluded that additional general information concerning the evaluation of food additives and other relevant substances produced through modern biotechnology (especially genetic modification) should be solicited through government comments as follows:

- the description of substances produced through modern biotechnology, especially genetic modification;
- the need for a description or other details concerning the production methods used in the genetic modification of the producing organism;
- the need and details required for a description of the producing organism, and;
- requirements for identity and purity.

141. The Committee agreed that the Commission would be advised concerning this course of action, while noting that this information would also be forwarded to JECFA and WHO.

142. The Committee noted that at its next session it would consider the following matters:

- Proposed Draft General Codex Standard for Food Additives;
- Proposed Draft General Procedures for Establishing a General Standard for Contaminants in Food;
- Endorsement and/or Revision of Maximum Levels for Food. Additives and Contaminants in Codex Standards;
- Consideration of Specifications for the Identity and Purity of Food Additives;
- Proposed Amendments to the International Numbering System;
- Proposed Amendments to the Inventory of Processing Aids;
- Proposed Draft Maximum Levels for Aflatoxins in Food;
- Proposed Draft Maximum Levels for Aflatoxins in Feed;
- Proposed Draft Maximum Levels for Ochratoxin A;
- Establishment of guideline levels for cadmium and lead in food;
- Establishment of guideline levels for PCBs, PBBs, tetrachlorobenzyl-toluene and dioxins in foods;
- Establishment of guideline levels for polycyclic aromatic hydrocarbons, hydrogen cyanide, phthalates and ethylcarbamate;
- Proposals for the Priority Evaluation of Food Additives and Contaminants by JECFA.

DATE AND PLACE OF NEXT SESSION (Agenda Item 18)

143. The Committee decided that its 25th Session would be shortened by one day and held from 22-27 March 1993 in the Netherlands, with the understanding that the Working Group on the General Standard on Food Additives would meet on the morning of 19 March, and the Working Group on Specifications would meet in the afternoon of 19 March.

Annex 1

CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

Summary Status of Work

Subject	Step	For Action By:	Document Reference
Proposed Draft Maximum Level for Aflatoxin M_1 in Milk	5	20th CAC	Appendix V, ALINORM 93/12
Specifications Recommended for Adoption by the Commission as Codex Advisory Specifications	3	20th CAC	Appendix III, ALINORM 93/12
Amendments to the International Numbering System	3 & 8	Governments 25th CCFAC 20th CAC	Appendix IV and paras. 54-56, ALINORM 93/12
Proposed Draft Codex General Standard for Food Additives	3	US/Governments WG on GSFA 25th CCFAC	paras. 29-36, ALINORM 93/12
Proposed Draft Codex Procedures for Establishing a General Standard for Contaminants in Foods	3	Netherlands/ Denmark Governments 25th CCFAC	paras. 64-78, ALINORM 93/12
Consideration of Specifications not adopted as Codex Advisory Specifications	1	Governments WG on Specifications 25th CCFAC	Appendix VII, ALINORM 93/12
Consideration of Specifications for the Identity and Purity of Food Additives	1	Governments WG on Specifications 25th CCFAC	paras. 47-53, ALINORM 93/12
Proposed Draft Guideline Level for Aflatoxin B_1 in Supplementary Feedingstuffs for Milk Producing Animals	3	Governments 25th CCFAC	Appendix V, ALINORM 93/12
Information on Aflatoxins in Specific Foodstuffs	3	Governments 25th CCFAC	paras. 85 and 92, ALINORM 93/12
Information on Ochratoxin A	3	Governments 25th CCFAC	paras. 93-94, ALINORM 93/12
Sampling Plans for Aflatoxins		CCEXEC Expert Cons. on Sampling 25th CCFAC	paras. 95-99, ALINORM 93/12
Identification of Additional Predatory Species of Fish as Related to the Codex Guideline Level for Total Mercury in Fish	3	CCFFP Governments 25th CCFAC 20th CAC	paras. 102-105, ALINORM 93/12
National Strategies, Information and Levels for			
(a) Cadmium and Lead	3	Governments 25th CCFAC	paras. 106-109, ALINORM 93/12
(b) PCBs, PBBs, Tetrachloro-benzyltoluene	3	" "	paras. 110-113, ALINORM 93/12
(c) dioxins	3	" "	paras. 114-116,

(d) polycyclic aromatic hydrocarbons, hydrogen cyanide, phthalates and ethyl carbamate	3	" "	ALINORM 93/12 paras. 117-122, ALINORM 93/12
Amendments to the Inventory of Processing Aids	3	Governments 25th CCFAC	paras. 57-59, ALINORM 93/12
Food Additives and Contaminants Proposed for Priority Evaluation by JECFA		Governments 25th CCFAC	Appendix VI, ALINORM 93/12

APPENDIX I

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* The Heads of Delegations are listed first: Alternates, Advisers and Consultants are listed in alphabetical order.

* Les Chefs de délégations figurent en tête et les suppléants, conseillers et consultants sont énumérés par ordre alphabétique.

* Figuran en primer lugar los Jefes de las delegaciones, los Supletes, Asesores v Consultores aparecen Dor orden alfabético.

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APPEND II

ACTION REQUIRED AS A RESULT OF CHANGES IS ADI STATUS

Substance	Previous acceptable daily intake in mg/kg body weight and other toxicological recommendations	Present acceptable daily intake (ADI) in mg/kg body weight and other toxicological recommendations	Current Codex Uses	Secretariat Recommendation for Action
Eraulslfiers				
Sucrose esters of fatty acids and sucroglycerides	0-10 (group ADI)	0-16 (group ADI based on sucrose esters contained in sucrose esters of fatty acids and sucroglycerides)	Sucrose Esters of Fatty Acids: Margarine - Cocoa Powder and Mixtures - 10 g/kg Sucroglycerides: Margarine - 10 g/kg	As the group ADI has been increased, no action is required.
Thermally oxidized soya bean oil	---	0-3	None	No action required.
Thermally oxidized soya bean oil interacted with mono- and di-glycerides of fatty acids	No ADI allocated	0-30	None	No action required.
Enzvme preparations				
Cellulase from *Trichoderma longibrachiatum*	0-0.3 (temporary-based on T. *reesi)*	Not specified	None	No action required.
B-Glucanase from *Trichoderma harzlanum*	0-0.5 (temporary)	Not specified	None	No action required.
Lysozyme	---	Acceptable for use in food processing	None	No action required.
Flavouring aeents				
trans-Anethole	0-0.6 (temporary)	0-0.6 (temporary)	None	No action required.

Ethyl vanillin	0-5 (temporary)	0-5 (temporary)	Follow-up Formula Canned Baby Food, etc. Cocoa Powders, Chocolate - small amounts Cream - limited by GMP	50 mg/kg 70 mg/kg	As the ADI remains unchanged, no action is required.
Llmonene	---	0-1.5 (applies to total intake of limonene. Food additive intake should not exceed 0.075 mg/kg bw/day, which represents 5% of the ADI)	None		No action required.
Quinine hydrochloride	0-0.9 (temporary)	Current use levels up to 75 mg/1 in soft drinks are not of toxicological concern	None		No action required.
Solvents 1,2-Dichloroethane	Not to be Used	ADI not allocated because of evidence of genotoxicity and carcinogenicity	None		No action required.
Dichloromethane	ADI Withdrawn	Should be limited to current uses	None		No action required.
Dlethyleneglycol monoethyl ether	No ADI allocated	ADI not allocated because of inadequate data	None		No action required.

Thickenine aeents Alginic acid and its ammonium, calcium, potassium, and sodium salts	0-50 (group ADI)	Not specified (group ADI)	Minarine - Canned Sardines - Cottage Cheese - Creamed Cheese, Cream and Yogurts - Pickled Cucumbers - Processed Cheese - Canned Vegetables - Quick Frozen Fish Products - Mayonnaise - Bouillons and Consommés - Cooked Cured Ham and Pork Shoulder -	10 g/kg 20 g/kg 5 g/kg 5 g/kg 500mg/kg 8 g/kg 10 g/kg 5 g/kg 1 g/kg 3 g/kg GMP	As the ADI has bee established as "no specified", no action is required.
Processed *Euchewna* seaweed	No ADI allocated	ADI not allocated because of inadequate data	None		No action required.
Waxes	---	Present uses not of toxicological concern	None No action required.		
Beeswax					
Candelilla wax	---	Present uses not of toxicological concern	None		No action required.
Carnauba wax	---	0-7	None		No action required.
Hicrocrystalline wax Paraffin wax	previously evaluated under hydrocarbon waxes - no ADI allocated	Not specified (Group ADI for microcrystalline and paraffin waxes)	None		No action required.
Shellac	---	Present uses not of toxicological concern	None		No action required.

Miscellaneous substances Curcumin	0-0.1 (temporary)	0-0.1 (temporary)	Fats and Oils, Minarine - 5 mg/kg Bouillons and Consommés - 50 mg/kg Mayonnaise - 100mg/kg Butter, Margarine and Processed Cheese - GMP	No action required.
Furfural	---	ADI not allocated because of evidence of genotoxlclty and carclnogenlclty	None	No action required.
Potassium bromate	0-60 mg bromate/kg flour	Not appropriate for use as a flour-treatment agent	Wheat flour-50 mg/kg	Commission endorsement should be withdrawn and Committee notified.
Naturallv occurring toxicants Cyanogenlc glycoslde s	---	Safe level of intake could not be estimated because of a- lack of quantitative data	Cassava Flour (hydrocyanic acid) 10 mg/kg	Inform Codex Co-ordinating Committee for Africa (NOT subject to endorsement - for Information only).
Solanlne and chaconlne	---	Normal levels in potatoes (2-10 mg/100 g) not of toxlcologlcal concern	None	No action required.

APPENDIX III

SPECIFICATIONS FOR IDENTITY AMD PURITY OF CERTAIN FOOD ADDITIVES ARISING FROM THE 37TH MEETING OF JECFA

CATEGORY I: (Recommended for adoption to the Commission)

Activated carbon
d-Carvone
1-Carvone
Erythorbic acid
Gellan gum
Glycerol esters of wood rosin
Sucrose acetate isobutyrate
Vegetable carbon

CATEGORY II: (Recommended for adoption after editorial changes, including typographical revisions)

Butylated hydroxytoluene
Dimethyl dicarbonate
Dioctyl sodium sulfosuccinate
Erythrosine
Mineral oil Polydimethylsiloxane
Tertiary butylhydroquinone

CATEGORY III: (Referred to JECFA, substantive changes required)

a-Amylase from *Bacillus stearothermophilus* (nomenclature and need to specify strain)
a-Amylase from *Bacillus subtilis* (same as above)
Disodium pyrophosphate (questions on fluoride limit, water insoluble matter and pH range)
Lecithin (formula for acid value)
Lecithin, partially hydrolyzed (formula for acid value)
Tetrasodium pyrophosphate (question on fluoride limit)
Trichlorogalactosucrose (questions on nomenclature and methodology)
Xanthan gum (question on limit for yeasts and moulds - singly or in combination)

CATEGORY IV: (Substances on the agenda of a forthcoming meeting of JECFA)

trans-Anethole

APPENDIX IV

PROPOSED AMENDMENTS TO THE INTERNATIONAL NUMBERING SYSTEM

The following INS food additives numbers were allocated, amended or deleted by agreement of the 24th CCFAC for adoption by the 20th Session of the Codex Alimentarius Commission:

ADDITIONS

Number	Food Additives	Functions
955	Sucralose (trichlorogalactosucrose)	Sweetener
905c (i)	Microcrystalline Wax	Glazing Agent
905c (ii)	Paraffin Wax	

DELETION

164	Saffron	Colour

APPENDIX V

PROPOSED DRAFT MAXIMUM LEVEL FOR AFLATOXIN M_1 IN MILK
(for Commission adoption at Step 5)

0.05 μg/kg aflatoxin M_1

PROPOSED DRAFT GUIDELINE LEVEL* FOR AFLATOXIH B_1 IN SUPPLEMENTARY FEEDING STUFFS FOR MILK PRODUCING ANIMALS
(for Government comments at Step 3)

[5 μg/kg] Aflatoxin B_1

* Guideline levels are intended for use in regulating food moving in international trade. When the guideline levels are exceeded, governments should decide whether and under what circumstances the food should be distributed within their territory or jurisdiction

APPENDIX VI

FOOD ADDITIVES AND CONTAMINANTS PROPOSED BY CCFAC FOR PRIORITY EVALUATION BY JECFA

Contaminants	Proposed by
Nitrite	
Nitrate	The Netherlands
Nitrosamines	
Ochratoxin A	UK, Denmark
Dioxins	CCFAC
Ethyl carbamate	CCFAC
Phthalates	The Netherlands
Polycyclic aromatic hydrocarbons	Denmark
Paralytic shellfish toxins	Canada
Trichothecenes	The Netherlands

Others	Proposed by
Safety of food and feed products after ammoniation to reduce aflatoxin levels	Secretariat

APPENDIX VII

OLDER JECFA SPECIFICATIONS WHICH WERE NEVER REVIEWED OR WERE NOT REVIEWED UNDER THE CURRENT SYSTEM

Food Additive	JECFA Specification Reference
NEVER REVIEWED:	
Acetone peroxides	NMRS 40A, B, C (1966)
Ammonium persulfate	NMRS 40A, B, C (1966)
Benzaldehyde	NMRS 44B (1968)
Borax	NMRS 31 (1962)
Boric acid	NMRS 31 (1962)
Butyl acetate	NMRS 44B (1968)
Calcium iodate	NMRS 40A, B, C (1966)
Calcium peroxide	NMRS 40A, B, C (1966)
Calcium phosphate, monobasic	NMRS 40A, B, C (1966)
Chlorine dioxide	NMRS 35 (1964)
Decanal	NMRS 44B (1968)
Diacetyl	NMRS 44B (1968)
Distearyl thiodipropionate	NMRS 31 (1962)
Dulcin	NMRS 44B (1968)
Ethyl acetate	NMRS 44B (1968)
Ethyl butyrate	NMRS 44B (1968)
Ethyl isovalerate	NMRS 44B (1968)
dl -Menthol	NMRS 44B (1968)
1-Menthol	NMRS 44B (1968)
Methyl phenylacetate	NMRS 44B (1968)
Methyl salicylate	NMRS 44B (1968)
gamma-Nonalactone	NMRS 44B (1968)
Phenylacetaldehyde	NMRS 44B (1968)
o-Phenylphenol	NMRS 38A (1965)
Piperonal	NMRS 44B (1968)
Potassium chlorate	NMRS 46B (1970)
Potassium persulfate	NMRS 40A, B, C (1966)
Potassium propionate	NMRS 31 (1962)
Potassium sodium L(+)-tartrate	NMRS 35 (1964)
Sodium o-phenylphenol	NMRS 38A (1965)
Sodium phosphate, monobasic	NMRS 35 (1964)
Sodium L(+)-tartrate	NMRS 35 (1964)
Stearyl tartrate	NMRS 40A, B, C (1966)
Tartaric, acetic and fatty acid esters of glycerol, mixed	NMRS 44B (1968)
gamma-Undecalactone	NMRS 44B (1968)
Vanillin	

NOT REVIEWED UNDER THE CURRENT SYSTEM

Ammonium hydroxide	NMRS 55B (1975)
Cyclohexylsulfamic acid	NMRS 48B (1971)
Gelatin, edible	NMRS 48B (1971)
Hydrochloric acid	FNS IB (1976)
Lactic acid	NMRS 57 (1974)
Pepsin, avian	FNS IB (1976)
Propylene glycol	FNS IB (1976)
Sodium caseinate	NMRS 48B (1971)
Sodium polyphosphate, glassy	FNS IB (1976)
Sulfuric acid	FNS IB (1976)
Triacetin	