

codex alimentarius commission

FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

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WORLD HEALTH
ORGANIZATION

ALINORM 91/12

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

19th Session

Rome, 1–10 July 1991

**REPORT OF THE TWENTY SECOND SESSION OF THE
CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS**

The Hague, The Netherlands

19–24 March 1990

Note: This document incorporates Codex Circular Letter CL 1990/17-FAC

CX 2/7.2
CX 4/30.2

CL 1990/17-FAC
June 1990

To : - Codex Contact Points
- Participants at the Twenty Second Session of the Codex Committee on Food Additives and Contaminants
- Interested International Organizations

From : Chief, Joint FAO/WHO Food Standards Programme,
FAO, 00100 Rome, Italy

Subject : Distribution of the Report of the Twenty Second Session of the Codex Committee on Food Additives and Contaminants (ALINORM 91/12)

The report of the Twenty Second Session of the Codex Committee on Food Additives and Contaminants is attached. It will be considered by the 19th Session of the Codex Alimentarius Commission to be held in Rome, 1–10 July 1991.

A. MATTERS OF INTEREST TO THE 19TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION

1. Draft Guideline Levels for Certain Contaminants at Step 8 of the Procedure (Appendix VIII)

Guideline levels for i) Methyl Mercury in Fish, ii) Vinyl Chloride Monomer in Food and in Food Packaging Material, and iii) Acrylonitrile in Food have been submitted to the 19th Session of the Commission at Step 8 of the Procedure.

2. International Numbering System (INS) (Appendix III)

The proposed Foreward, Table of Functional Class Titles, Definitions and Technological Functions and amendments to the International Numbering System have been submitted to the 19th Session of the Commission at Step 8 of the Procedure.

Governments wishing to propose amendments to the above Draft Guidelines or to the proposed Foreward, Table of Functional Class Titles, Definitions and Technological Functions and amendments to the INS should do so in conformity with the Guide to the consideration of Standards at Step 8 (See 7th Ed. of the Procedural Manual of the Codex Alimentarius Commission) and send them to the Chief, Joint FAO/WHO Food Standards Programme, FAO, 00100 Rome, Italy, not later than 30 April 1991.

B. MATTERS OF INTEREST TO GOVERNMENTS AND INTERESTED INTERNATIONAL ORGANIZATIONS

1. Proposals for General Provisions for the use of Food Additives in Standardized and Non-Standardized Foods (Paras 29-37)

A separate Circular Letter will shortly be issued on the subject.

2. Guideline Levels for Radionuclides in Food in International Trade (para 26)

Governments and International organizations are invited to provide information on: i) dilution factors applied, and ii) treatment of minor dietary components in relation to contamination with radionuclides to this office not later than 1 October 1990.

3. Sampling Plans for Contaminants in Food (para 28)

Governments are invited to provide the sampling plans used in their countries for determination of contaminants in food to this office not later than 1 October 1990.

4. Intake of Intense Sweeteners (paras 39-44)

Governments are invited to provide any additional information they may have on the intake of intense sweeteners to Mr. Fondu, Co-Director Food Law Research Center, Free University of Brussels, 39 Avenue F.D. Roosevelt, Brussels with a copy to this office not later than 1 October 1990.

5. Functional Class Titles and International Numbering System (INS) (para 94)

Governments and International Organizations are invited to propose i) Additional food additives for inclusion in the INS, and ii) Additional functional class titles. The proposals should be accompanied by relevant information on the use of the food additive proposed for inclusion and with a proposed definition for the additional functional class proposed.

Information as above should be sent to this office not later than 1 October 1990.

6. Codex List B (paras 95-97)

The Codex List B is presently available as Appendix V to ALINORM 87/12 which is to be updated in the light of proposals of member countries and action resulting from recommendations of JECFA as contained in Appendix IV of this report.

Governments and interested international organizations are requested to send any suggestions for additions to Codex List B to Mrs. C.G.M. Klitsie, Chairman of the Codex Committee on Food Additives and Contaminants, Ministry of Agriculture and Fisheries, P.O. Box 20401, Bezuidenhoutseweg 73, 2500 EK, The Hague, The Netherlands, with a copy to this office not later than 1 October 1990. Suggested additions to Codex List B should be accompanied by pertinent information on the technological function of the additives.

7. Inventory of Processing Aids (paras 98-104)

Governments and international organizations are invited to propose additional processing aids for inclusion in the inventory. Such proposals should be accompanied by information on: i) category of the processing aid, ii) areas of utilization, iii) levels of residue in food, iv) interaction with food and v) pertinent references.

Information as above should be sent to Mr. R.J. Ronk, Deputy Director, Center for Food Safety and Applied Nutrition, 200 "C" Street, S.W. Washington, D.C. 20204 with a copy to this office not later than 1 October 1990.

8. Codex Advisory Specifications (paras 105-115)

Governments and international organizations are invited to review the list of food additives as contained in the revised annex of Conference Room Document CX/FAC 90/7 and inform this office not later than 1 October 1990 which food additives in their view should be considered for establishing Codex Advisory Specifications. It should be noted that food additives having tentative specifications will not be considered for establishing Codex Advisory Specifications.

9. Aflatoxins in Foods (paras 116-144)

a) Maximum levels of aflatoxin in food and feed (para 130)

Governments and international organizations are invited to comment on the proposed maximum level of 10 µg/kg total aflatoxins (B₁ + B₂ + G₁ + G₂) for all foods.

b) Sampling Plan for Aflatoxin (paras 122-124)

Governments and international organizations are invited to comment on a minimum sample size of [3 kg] for a lot of atmost25000 kg to be taken according to the proposed draft inspection scheme for shelled peanuts with regard to aflatoxin B₁, as contained in Annex 2 of CL 1989/16-FAC for analysis of total aflatoxin.

c) Guideline Levels of Aflatoxin in Feed (paras136-143)

Governments and international organizations are invited to comment on proposed guideline level of 10 µg/kg of aflatoxin B₁ in supplementary feeding stuffs for milk producing animals and provide information on i) measures taken by governments to control levels of aflatoxin M₁ in milk; ii) measures taken by governments to control levels of aflatoxin B₁ not exclusively in feed, and iii) information on relationship between intake of aflatoxin from feed by dairy cattle and content of aflatoxin M₁ in milk.

Comments on Items 9 a, b, and c should be sent to Mr. W.J. de Koe, Ministry of Welfare, Health and Cultural Affairs, General Inspectorate for Health Protection, P.O. Box 5406, 2280HK Rijswijk (ZH), The Netherlands, with a copy to this office not later than 1 October 1990.

10. Guideline Levels for Cadmium and Lead in Food (Paras 147-158)

The current levels for lead in existing Codex standards is contained in Volume XVII of Codex Alimentarius. No levels for cadmium have been established as yet in any of the existing Codex standards.

Governments are invited to provide information on national regulations for Pb and Cd in foods, methods of compliance and enforcement of national regulations, intake data and indications of whether or not the national regulations have caused problems in trade to Mrs. C.G.M. Klitsie, Chairman of the Codex Committee on Food Additives and Contaminants, Ministry of Agriculture and Fisheries, P.O. Box 20401 Bezuidenhoutsweg 73, 2500 EK The Hague, The Netherlands with a copy to this Office not later than 1 October 1990.

11. Establishment of Codex Maximum Levels for Patulin and Ochratoxin in Foods (Para 145).

JECFA will be evaluating Ochratoxin at its 37th Session. It established a PTWI of 7 µg/kg Body weight for Patulin at its 35th Session.

Governments are invited to comment on the need to establish Codex maximum levels for patulin and ochratoxin in foods and provide any information they have on national strategies to control the mycotoxins in foods, national regulations, methods of compliance and enforcement of these regulations and indications whether these national regulations have caused problems in trade.

Such comments or information as above should be sent to Mrs. G.C.M. Klitsie, Chairman of the Codex Committee on Food Additives and

12. National Strategies for the Control of Dioxins in Food (paras 171-184)

Governments are invited to provide information on national strategies for the control of dioxins in foods with an emphasis on controlling the source of emissions and on residue levels of dioxins in foods to Mrs. G.C.M. Klitsie, Chairman of the Codex Committee on Food Additives and Contaminants, Ministry of Agriculture and Fisheries, P.O. Box 20401, Bezuidenhoutseweg 73, 2500 EK, The Hague, The Netherlands, with a copy to this office not later than 1 October 1990. In providing analytical data on dioxins, it is important to define what values of toxicity equivalence are used.

13. Draft Questionnaire on Certain Contaminants (para 191)

The Codex Committee on Food Additives and Contaminants at its 22nd Session expressed the opinion that information on Benz-a-pyrene, Hydrogen Cyanide, 2-Diethylhexylphthalate and Ethylcarbamate should be collected from Governments as this would provide guidance as to its future action. Governments and international organizations are invited to answer the following questions and send the information to Mrs. G.C.M. Klitsie, Chairman of the Codex Committee on Food Additives and Contaminants, Ministry of Agriculture and Fisheries, P.O. Box 20401, Bezuidenhoutseweg 73, 2500 EK, The Hague, The Netherlands, with a copy to this office not later than 1 October 1990

1. Has your country considered steps to control levels of these contaminants and if yes what approach was followed?
(Surveying actual levels, sources of contamination or intake data, other?)
2. Have levels been set?
If yes, what type of levels?
Maximum levels Guideline levels Action levels
3. Define what the type of levels mean.
4. What limits have been set in various foods?
5. Can you provide any other information, such as natural occurrence or actual levels found in foods or analytical methods and sampling plans used and limits of detection?

14. Proposals for the Priority Evaluation of Food Additives by JECFA (Appendix VIII. Paras192-205)

Governments and interested international organizations are requested to send their suggestions on food additives and contaminants to be considered for inclusion in the Codex Priority List to this office not later than 1 October 1990. Such submissions for inclusion in the Codex Priority List should have information, where possible, regarding food additives on:

- | | |
|--------------------------|-------------------------------|
| a) method of manufacture | d) estimates of daily intake |
| b) functional use | e) reactions and fate in food |
| c) impurities | f) toxicological data |

SUMMARY AND CONCLUSIONS

The 22nd Session of the Codex Committee on Food Additives and Contaminants reached the following conclusions during its deliberations:

- Agreed to seek information from governments on dilution factors applied and treatment of minor dietary components in relation to contamination with radionuclides (para 26).
- Agreed to retain its simple sampling plan for Mercury, Cadmium and Lead since it was proposed for controlling levels only and not for monitoring and to submit it to the CCEXEC for temporary endorsement (para 28). In addition agreed to gather the sampling plans used in Food (Para 28).
- Agreed to prepare a paper containing studies on antioxidants and preservatives by grouping together the present Codex uses of these additives in the format proposed by Dr. Denner and send it out for comments by means of a circular letter requesting information on uses in non-standardized foods (para 36).
- Agreed to seek additional information from governments on the intake of intense sweeteners (para 41).
- Agreed to submit the proposed forward, table of functional class titles, definitions, technological functions and amendments to the International Numbering System to the 19th Session of the Commission for adoption (Para 93, Appendix III).
- Agreed to update the Inventory on Processing Aids through the existing procedure (para 103).
- Agreed to the JECFA Secretariat's procedure regarding the future review of new JECFA specifications and publication of Codex Advisory Specifications (para 110).
- Agreed that aflatoxins in food should be expressed as total aflatoxins (para 119).
- Agreed to seek comments from governments on a maximum level for all foods for human consumption excluding milk and dairy products of 10 µg/kg total aflatoxin in a sample size of not less than 3 kg for a lot of at most 25 000 kg (paras 123, 130).
- Accepted number of AOAC methods for determination of aflatoxin in food by TLC (Appendix VI) as reference methods (Para 134).
- Agreed to send the guideline level of 10 µg/kg aflatoxin B₁ for feed for comments to governments and seek information on measures taken by governments to control i) levels of aflatoxin M₁ in milk and ii) aflatoxin B₁, not exclusively in feed and on relationship between intake of aflatoxin from feed of dairy cattle and content of aflatoxin M₁ in milk (Para 143).
- Agreed not to proceed further with the establishment of guideline levels for Cd and Pb, in food but determine national regulatory approaches for the control of Cd and Pb in food and their enforcement and especially whether or not these national regulations have caused problems in trade (Para 158).

- Advanced the guideline levels for methyl mercury in fish and for Vinylchloride Monomer and Acrylonitrile in foods and food packaging materials to Step 8 (Paras 165, 169 and Appendix VIII).
- Continued the examination of national strategies for control of dioxins, polychlorinated biphenyls, benz(a)pyrene, hydrogen cyanide, DEHP and Ethyl Carbamate in foods through solicitation of data and information on national government strategies (Paras 183, 190 and 191).
- Proposed a list of food additives and contaminants for priority evaluation by JECFA (Para 205, Appendix VII).

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OPENING OF THE SESSION (Agenda Item 1)

1. The Codex Committee on Food Additives and Contaminants held its 22nd Session in The Hague, The Netherlands, from 19 - 24 March, 1990, through the courtesy of the Government of The Netherlands. Mrs. C.G.M. Klitsie (The Netherlands) acted as Chairman. Mr. R. Top (The Netherlands) acted as Vice-chairman. The Session was attended by 191 participants, representing 35 member countries, and 32 international organizations (see Appendix I for the List of Participants, including the Secretariat).

2. The Director General of the Ministry of Agriculture, Nature Management and Fisheries of The Netherlands, Mr. J.P. Van Zutphen, pointed out that the changing international political scene will result in increasing intensity for world trade agreements. The present emphasis on food in the Uruguay Round is an example of such urgency. The General Agreement on Tariffs and Trade is looking for advice to international bodies like the Codex Alimentarius to prevent international trade disputes in the field of sanitary and phytosanitary issues. He welcomed the discussions the Committee was planning on the so-called "Denner-paper" to elaborate a general standard for food additives, including a revision of the additive provisions in the Codex standards and the elaboration of additive provisions in foods not covered by Codex standards.

3. The Director General emphasized that this activity would enhance the protection of public health while not undermining the good habits and culinary traditions existing in different parts of the world.

4. The Director General noted that a large portion of the agenda was dedicated to contaminants. He reminded the Committee of the recent problems in some parts of The Netherlands with elevated levels of dioxin in milk and explained the measures taken in order to prevent animal products of those areas entering the market. He was pleased that the impact of such contamination on world trade was discussed by the Committee. The Director General called for increased inputs in monitoring the presence of contaminants in food in order to further intensify the efforts to guarantee safe products.

5. The Director General also pointed out the change in the chairmanship of the Committee. He explained that Mr Feberwee, the former Chairman, had accepted a job as Director of the Department for Agricultural Development Cooperation. His successor, Mrs. Klitsie, will now be chairing the coming session.

6. The Director General ended by wishing the Committee a good and productive meeting.

ADOPTION OF THE AGENDA (Agenda Item 2)

7. The Committee adopted the Provisional Agenda (CX/FAC 90/1) with minor corrections. The Committee agreed to form an ad hoc Working Group that would examine written comments and recommend guideline levels for cadmium and lead in food for the Committee's consideration. The Delegation of Finland agreed to chair this Working Group in which the delegations of Australia, Belgium, Canada, Denmark, Federal Republic of Germany, Japan, The Netherlands, Norway, Sweden, Switzerland, Thailand, UK and the USA as well as FAO and WHO agreed to participate.

8. In order to address Agenda Item 14c, the Committee also agreed to establish a small drafting group to prepare a Questionnaire on Certain Contaminants (Benz(a)pyrene, Hydrogen Cyanide, DEHP and Ethyl Carbamate). The Delegation of

The Netherlands agreed to chair this drafting group in which the delegations of Denmark and the USA as well as FAO agreed to participate.

APPOINTMENT OF RAPPORTEURS (Agenda Item 3)

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

CONSIDERATION OF THE REPORT OF THE THIRTY-FIFTH MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (JECFA) (Agenda Item 4a)

10. The thirty-fifth report of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) was introduced by the Joint Secretariat of JECFA, Dr. J.L. Herrman (WHO) and Dr. J. Weatherwax (FAO). The report has been published by WHO as Technical Report Series No. 789. The toxicological monographs from the thirty-fifth meeting of JECFA have recently been published by WHO as WHO Food Additives Series No. 26. These volumes are no longer being published by the Cambridge University Press and therefore, in the future they will be available directly from WHO. The specification monographs are being published by FAO in the FAO Food and Nutrition Paper Series.

11. Twenty-one food additives and two contaminants were evaluated by JECFA. Three food additives (dihydrocoumarin, quinine hydrochloride and ferrous lactate) and two contaminants (patulin and polychlorinated biphenyls (PCBs)), were evaluated for the first time.

12. The previous temporary ADIs for cinnamaldehyde, canthaxanthin, and turmeric oleoresin were not extended. The reasons for not extending the temporary ADIs were varied, but in all cases related to the lack of information for making definitive decisions on safety rather than conclusions that their ingestion is unsafe. With canthaxanthin, the primary finding of concern was deposition of crystals in the human retina. Although there was no evidence that this is a toxic effect, it precluded the setting of an ADI because of its very slow reversibility and the lack of a demonstrated no effect level.

13. With regard to contaminants, JECFA established a Provisional Tolerable Weekly Intake (PTWI) of 7 micrograms per kg of body weight for patulin. PCBs presented many difficulties, mostly because many of the mixtures that had been tested toxicologically were not well defined and were not always the same to which humans are exposed. The monkey appears to be the most appropriate species, in which the no-observed-effect level was 0.04 mg per kg of body weight per day. Because of the limitations of the data, JECFA was unable to establish a PTWI on the basis of this no-observed-effect level. JECFA recommended, however, that some indication of safe exposure levels can be obtained from this no-effect-level.

14. JECFA prepared new General Specifications for Enzymes used in Food Processing. These supersede and replace the previous general specifications for enzymes which had been prepared in 1981. All future enzyme preparations considered by JECFA must meet these new General Specifications in addition to any specific requirements of their individual monograph.

15. JECFA continued to be concerned regarding the specifications of substances of natural origin. Wide variations in composition have resulted in rather broad specifications which may have statements such as "not less than declared on label" for content of the main component. JECFA will continue to attempt to identify principles to establish

appropriate specifications for substances of natural origin, which are consistent with the substance evaluated toxicologically.

16. In discussing spice oleoresins, JECFA considered that the use of chlorinated hydrocarbon solvents be discouraged because of toxicological concerns. The Committee plans to make an overall review of solvents used in food processing during a future meeting. For future specifications, JECFA will ask for the justification for use of a particular solvent and for more data on residue levels.

17. The Joint Secretary informed the Committee of the status of new or revised documents which are planned for publication in 1990. A combined compendium of JECFA specifications is being prepared with the assistance of the Japan Food Additives Association and will encompass all current food additive specifications. Those specifications which are also Codex Specifications will be so identified on the monograph front page and in the compendium index. The Food Additives Data System (FAO Food and Nutrition Paper 30) is being revised and updated (the last update was made in 1987) to match the combined compendium. A second revision of the JECFA Guide to Specifications (FAO Food and Nutrition Paper) has been drafted and is undergoing final editing for publication.

REPORT OF THE JOINT UNEP/FAO/WHO FOOD CONTAMINATION MONITORING PROGRAMME (GEMS/FOOD) (Agenda Item 4b)

18. Dr. Galal Gorchev informed the Committee of the Joint UNEP/FAO/WHO Food Contamination Monitoring Programme, or GEMS/Food, as outlined in document CX/FAC 90/18-Add.2. This is a component of the Global Environment Monitoring System (GEMS) established by the United Nations Environment Programme. The major objective of the Programme is to inform governments, the Codex Alimentarius Commission, other relevant institutions and the public on levels and trends of contaminants in food, their contribution to total human exposure and significance with regard to public health. Supporting components of the Programme involve technical cooperation, training, analytical quality assurance (AQA), and information exchange. At present, thirty-nine countries participate in GEMS/Food. Information is currently compiled on the concentrations of selected chemical contaminants in individual foods and in the total diet. Criteria used in the selection of these chemicals include toxicity, persistence and abundance in the environment, and size and type of population exposed. Foods selected for monitoring include staple foods, indicator foods, and foods significant in international and regional trade.

19. A recent GEMS/Food Review and Planning Meeting agreed to monitor a number of foods/contaminants on a regional basis in addition to a limited number of foods/contaminants that may be considered to be truly of global concern. This will allow for GEMS/Food programme to be more tailored to country needs. For example contaminants such as dioxins which could be of relevance to industrialized countries have been excluded from GEMS/Food on the basis of analytical difficulties associated with their determination in the majority of developing countries. Organochlorine pesticides, which have been banned in the majority of industrialized countries, are included for their relevance to developing countries.

20. The delegate from Australia expressed the need for data generated by GEMS/Food which could be useful to the CCFAC. The Committee was informed by Dr. Gorchev that laboratories in participating countries which have submitted large amounts of data on contaminants in food have generally performed well in the analytical quality assurance studies for lead, cadmium and mercury carried out for GEMS/Food by the UK

Ministry of Agriculture, Fisheries and Food. Upon close examination of the analytical quality of the data, it has been concluded that the GEMS/Food database can be considered to be of acceptable quality. Poor performance is often noted for those countries which submit very little data or none at all. The AQA studies are being used by some countries to gain experience without submitting data to GEMS/Food. Nevertheless, increased emphasis is being placed on the analytical quality of the data by making participation in national or international AQA studies a prerequisite for submission of monitoring data and by periodically conducting AQA studies.

MATTERS OF INTEREST TO THE COMMITTEE ARISING FROM OTHER CODEX SESSIONS (Agenda Item 4c)

21. The Committee had before it working paper CX/FAC 90/4 and CX/FAC 90/4-Add.1 (Conference Room Document). It was noted that the majority of issues were presented for information only and discussions were restricted to the following issues.

Guideline Levels for Radionuclides in Food in International Trade

22. The Committee noted that the above guideline levels were adopted by the Commission at its 18th Session and were published as a supplement to Volume XVII of the Codex Alimentarius. It was also noted that the Commission adopted an interim definition For guideline levels, agreed that the levels were applicable for one year following a nuclear accident and agreed that questions concerning the application of dilution factors and minor dietary components should remain under review. The Coordinating Committee for Asia (CCASIA) also discussed the guideline levels as instructed by the 36th Session of the Executive Committee, and concluded that the levels were too high. The CCASIA also asked CCFAC to provide information on the application of the Guideline Levels in years subsequent to the accident year.

23. The Committee noted that two paragraphs in the note to the Guideline Levels were still subject to review by the Commission at a later date, as the CCFAC and the Commission could not reach complete agreement on the applicability of the levels to dried or reconstituted foods, to certain classes of foods, or to certain dietary groups.

24. The Committee considered the establishment of guideline levels for food subsequent to the accident year, as requested by the CCASIA. The Delegation of Norway, supported by the Delegation of Argentina, requested the reopening of discussions to establish permanent guideline levels. The Delegation of the United Kingdom, supported by the delegations of Japan, Federal Republic of Germany and The Netherlands, voiced their opposition to reopening the discussion at present due to the wide variance of views in different countries and regional groupings. The Delegation of the United States also noted that new proposals would need to be based entirely on new science as the radionuclide fall out from a future accident would differ significantly from those after Chernobyl and new science would have to be applied to future accidental contamination.

25. The Secretariat pointed out that the levels were based on scientific data from many sources not related to a nuclear accident and that the approach to new levels could be the same toxicologically. It was felt that an evaluation of divergent national legislation was required before attempting to establish permanent levels.

26. The Committee concluded that this discussion should be forwarded to the Executive Committee of the Commission (CCEXEC) for advice. It was also agreed that a circular letter would seek information on dilution factors and minor dietary components in

relation to contamination with radionuclides. The consideration of establishing permanent guideline levels would be discussed at the next session.

Sampling Plans for Mercury, Cadmium and Lead

27. The Committee noted that its proposal to adopt the sampling plan for pesticide residues (CAC/PR 5-1984) as applicable to sampling for mercury, cadmium and lead in food commodities had not been endorsed by the Codex Committee on Methods of Analysis and Sampling (CCMAS). The CCMAS could not sanction a sampling procedure for environmental contaminants without knowledge of the distribution in food of the contaminants in question.

28. The Committee agreed to retain its simple sampling plan since the plan was proposed for controlling levels only and not for monitoring. The Committee also agreed to submit the simple sampling plan to the CCEXEC for temporary endorsement. The Committee also agreed to send out a Circular Letter asking for data concerning sampling plans used for contaminants in individual countries. The Committee decided that discussions on this issue would continue at its next session.

PROPOSALS FOR GENERAL PROVISIONS OF THE USE OF FOOD ADDITIVES IN STANDARDIZED AND NON-STANDARDIZED FOODS (Agenda Item 5)

29. The Committee had before it documents CX/FAC 90/16 and CX/FAC 90/16-Add.1 (Conference Room Document) which contained the views of the Governments of Finland, The Netherlands, Sweden, United Kingdom and the United States received in reply to Circular Letter CL 1989/16-FAC. In this Circular Letter governments had been invited to comment on certain recommendations proposed by Dr. W.H.B. Denner in his paper prepared for the 21st Session of the Committee and contained in document CX/FAC89/16. The Committee recalled that the paper had not been fully discussed at its previous session, but that the recommendations addressed to FAO and WHO had received broad support at the 18th Session of the CAC. On the basis of the recommendations FAO and WHO have taken steps to convene a Joint Conference on Food Standards, Chemicals in Food and International Trade in March 1991. Recommendations to the JECFA Secretariat (Nos 6 and 9) were addressed by the JECFA Secretariat both orally and in document CX/FAC 90/15-Add.1. In its present discussion the Committee considered only the recommendations addressed directly to it (Nos 5, 8 and 10).

30. The Committee agreed that it should have sufficient information from JECFA on how to translate ADI's into levels of use in food and drink (Recommendation No. 5). Where necessary the Committee will seek assistance from JECFA by means of a comprehensive list of clear direct questions.

31. In regard to Recommendations 8 and 10 (iii), the Committee discussed the difficulties it faced when asked to endorse provisions for food additives in a particular food standard without considering additive provisions in other food standards, or additive use in non-standardized foods. To overcome these problems, Dr. Denner's paper recommended the elaboration of a comprehensive Codex Standard for Food Additives (see Appendix III of CX/FAC 89/16).

32. The Delegation of the United States drew attention to the limitation imposed if a Codex Standard on Food Additives were limited to only those additives which had been evaluated by JECFA. It was pointed out that non-standardized foods were formulated with the use of a much wider range of additives and that considerable problems would arise estimating the intake or function of such additives. The Delegation also noted that

additives were only optional ingredients in foods whether standardized or not, and that therefore, any list of additives to be considered in the context of the proposed standard would need to be fully comprehensive. The Delegation of Australia proposed the use of the INS list of additives as ones which are known to be used in food and authorized in national regulations. The delegations of Belgium, Finland, France, the Federal Republic of Germany and the observer from IOCU were in favour of a more restricted list based on JECFA evaluations, and stated that this might require more substances to be evaluated by JECFA.

33. The Committee agreed to work with the JECFA list for the time being, and to consider other lists at a later date.

34. Several delegations drew attention to the complexity of the work which would be required to establish a Codex Standard for Food Additives as proposed by Dr. Denner. The view was expressed that a "food approach" might be used and that categories of non-standardized foods could be identified in which the use of food additives would be studied. Other delegations felt that the problem was the endorsement of food additives in Codex Standards, especially since many of the principal uses of the additives in question are for non-standardized foods. If the latter approach was used, there would be a need to estimate the use of additives in all foods. This was recognized to be a problem because exposure calculations could not be carried out on a worldwide basis due to the national nature of many of the non-standardized foods.

35. The observer of IOCU expressed the opinion that a cautious approach should be taken in examining the use of additives in food, and that the consideration of technological need should not be limited to additives with a low ADI. The observer stated that the approaches under consideration could undermine the General Principles for the Use of Food Additives and recommended the use of a food based approach similar to that used in Nordic countries. The Delegation of Sweden, in supporting this view, stated that there was a need for some liberalization of the use of food additives in regulations, but that consideration should continue to be given to both safety and technological need.

36. The Committee agreed that it would be necessary to examine how the approach recommended by Dr. Denner might be achieved. It agreed that priority should not be given to any particular group of additives, or indeed to additives with a low ADI, as it was more important to consider the ADI within the context of potential intake. The Secretariat was requested to prepare studies on antioxidants and preservatives by grouping together the present Codex uses of these additives in the format proposed by Dr. Denner. These studies would be sent out for comment by means of a circular letter requesting information on uses in non-standardized foods. The CL will be discussed by the next session of the Committee.

37. It was further agreed to inform the Commission of the present discussion and the decision to undertake exploratory work in this area. The Committee furthermore agreed that it would be appropriate to assess the progress of this work after 4 years, i.e. before the 20th Session of the Commission, to determine whether progress was, in fact, satisfactory.

CONSIDERATION OF INTAKE OF FOOD ADDITIVES AND CONTAMINANTS (Agenda Item 6)

38. The Committee had before it documents CX/FAC 90/5 and 90/5-Add.1 containing responses from governments to a Circular Letter (CL 1989/16-FAC) requesting information on the intake of intense sweeteners, cadmium, mercury and lead.

Intake of Intense Sweeteners

39. In presenting document CX/FAC 90/5, which contained data on intake of intense sweeteners received from Finland and USA, Mr. M. Fondu (Belgium) pointed out to the Committee that for assessing intake of intense sweeteners, intakes not only from foodstuffs but also from table top sweeteners and pharmaceuticals should be taken into consideration.

40. The Committee noted that intake data provided by Finland addressed saccharin, cyclamate and aspartame and that provided by the USA contained new information on new authorizations of aspartame and intake studies on previously listed aspartame-sweetened foods. Aspartame has been approved for use in the United States for a large number of foods as a sweetening agent in accordance with good manufacturing practice. The intakes of the different sweeteners reported by these countries were lower than the Acceptable Daily Intakes allocated by JECFA.

41. The Committee noted that studies were in progress in a number of countries on intakes of intense sweeteners and agreed that the subject should be reviewed at the next session. A circular letter should be sent out to governments requesting information on intake of intense sweeteners.

42. Mr. Fondu brought the attention of the Committee to a paper presented by Canada at a symposium in Helsinki (Symposium on Monitoring of Dietary Intakes, Helsinki, Finland, June 12-14, 1989, Springer-Verlag) which, among other items, compared data on the intake of aspartame determined by various techniques.

43. Mr. Fondu also reminded the Committee that governments should use the guidelines for simple evaluation of food additive intake elaborated by the CCFAC and recently issued as CAC/GL 3 for determination of intake of food additives falling in the categories of antioxidants and preservatives. Such data would prove useful for the exercise on a horizontal approach of food additives, which the Committee is addressing (see paragraph 36).

44. Mr. Fondu informed the Committee that the Working Group on Food Additive Intake could play a significant role in the future and proposed setting up such a working group to work at the next session of the Committee.

Establishing an ad hoc Working Group on Food Additive Intake

45. The Committee provisionally reinstated the Working Group with Belgium as Chairman with the provision that it would only meet before the next session if there is sufficient work. The following countries and organizations indicated their interest to participate in the group: Australia, Belgium, Canada, Denmark, Finland, Fed. Rep. of Germany, France, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, Thailand, UK, USA, EEC, ASPEC, CIAA, MARINALG, IDF, IFAC, FAO and WHO.

Dietary Intake of Cd, Pb and Hg

46. Information was provided by the WHO representative on dietary intake, levels in food and estimated intake of cadmium, lead and mercury (CX/FAC 90/5 - Add.1). Information provided by Canada, Denmark, Finland, Italy, The Netherlands, Sweden, Thailand, the United Kingdom and the United States of America was supplemented by that obtained from institutions participating in GEMS/Food. The dietary intakes of Cd, Pb and Hg are compared to the respective PTWI established by JECFA which refer to intake from all sources.

47. In a separate request, the CCFAC invited governments to provide survey data for cadmium and lead in food which could be used to support proposed guideline levels (GLs) for these two contaminants. Monitoring data on the median and 90th percentile levels of Cd, Pb and Hg in food are available to GEMS/Food and were also presented to the Committee. Only those data from countries that performed well in GEMS/Food analytical quality assurance (AQA) studies for metals were considered. It should be noted that most of the GEMS/Food data on dietary intake and levels of contaminants in food have been provided by developed countries and therefore, do not allow for a comprehensive and definitive evaluation of levels and trends of chemical contamination of food on a global basis.

48. Finally, intake estimates must be used to evaluate the acceptability from a public health point of view of Codex proposed guideline levels. The Committee noted that survey data on average contaminant levels in foods together with food consumption data can be used to obtain rough estimates of intakes. In the absence of dietary intake studies, this approach can be used by governments to make a preliminary assessment of likely dietary exposure. GEMS/Food survey data together with a "global diet" were used to illustrate such an approach. Better intake estimates can be made if individual countries use their own data on levels of contaminants in food, as well as their own food consumption data.

49. The measured dietary intakes of cadmium, lead and mercury of average adults and of infants and children were all below the respective PTWI. However, the PTWIs of Cd, Pb and Hg refer to intake from all sources and routes (air, food, water, soil, dermal, etc.). A sufficient margin should therefore exist between the measured dietary intake and the PTWI to allow for exposure from sources other than food. This is specially true for lead where intake from air and drinking water can be appreciable.

50. Data provided by several countries indicate that cereals and their products, followed by potatoes and other vegetables are the largest contributors to the intake of cadmium. In the case of lead, foodstuffs that contribute most to the total intake vary from country to country and have been identified as being alternately drinking water, cereals, fruits, canned beverages or vegetables. It is generally assumed that fish is the main contributor to the intake of mercury. However, several countries (Belgium, Fed. Rep. of Germany and The Netherlands) reported that fish contributed only 20% of the intake of total mercury.

51. GEMS/Food data indicate that averages of all the medians and 90th percentile levels of Pb, Cd and Hg in food are below the proposed Guideline Levels. However, the upper range of these medians and 90th percentile values may exceed the proposed Guideline Levels in some countries.

52. Intake estimates are valuable for judging the acceptability, from a public health point of view, of Codex recommended guideline levels. The Committee noted that estimates of intake given in CX/FAC 90/5 - Add.1 are based on numerous assumptions, some of which may or may not be justified such as the use of a "global diet" and/or the use of overall average contaminant levels derived from GEMS/Food data which are country specific.

53. The observer from IOCU informed the Committee that more information should be obtained on dietary exposure of children in those countries where there is high adult intake.

54. The Delegation of Denmark noted that a decreasing trend is observed in his country in levels of lead in vegetable and fruit and canned food. This is due to the increasing use of unleaded petrol and non-lead soldered cans.

55. The Delegation of the Federal Republic of Germany informed the Committee that it has embarked on a major food contamination monitoring programme for PCBs, pesticide residues and numerous other contaminants in food.

56. The Delegation of Japan emphasized the need to collect information from developing countries on intake and levels of contaminants in food.

57. The Ministry of Health of Egypt has initiated studies on lead, cadmium and mercury in food, and the results of these studies will be forwarded to GEMS/Food.

58. It was suggested to the Committee that it would be desirable for the Working Group on Intake of Food Additives and Contaminants to develop guidelines for estimating intake of contaminants similar to those elaborated for food additives. The Committee did not accept the proposal.

ENDORSEMENT OF MAXIMUM LEVELS FOR FOOD ADDITIVES AND CONTAMINANTS IN CODEX COMMODITY STANDARDS AND REVISION OF PREVIOUS ENDORSEMENTS (Agenda Item 7)

59. The Committee had before it documents CX/FAC 90/10, Parts I, II and III and CX/FAC 90/10 Part I-Add.1, containing the commendations of the Secretariat for endorsement of the food additive provisions. The decisions of the Committee concerning the endorsement or postponement of the endorsement of food additive provisions are indicated in this report (Appendix II).

Part I: Endorsement of Food Additive Provisions in Codex Commodity Standards Codex Committee on Processed Meat and Poultry Products (CCPMPP)

A. Draft Revised Codex Standard for Corned Beef (ALINORM 89/16, Appendix V, Step 5)

60. The Committee agreed to the recommendations of the Secretariat.

B. Draft Revised Codex Standard for Luncheon Meat (ALINORM 89/16, Appendix VI, Step 5)

C. Draft Revised Codex Standard for Cooked Cured Chopped Meat (ALINORM 89/16, Appendix IX, Step 5)

D. Draft Revised Codex Standard for Cooked Cured Ham (ALINORM 89/16, Appendix VII, Step 5)

E. Draft Revised Codex Standard for Cooked Cured Pork Shoulder (ALINORM 89/16, Appendix VIII, Step 5)

61. The Secretariat explained that figures for maximum levels placed between brackets were still under consideration by the CCPMPP and that a proposal for a maximum level for Allura Red had been sent to governments for comments.

62. The Committee agreed to the proposal of the chairman to await the discussions on these items (Potassium and Sodium Nitrite; Isoascorbic acid and Na Salt; Allura Red) in the Commodity Committee and postpone decisions until a final proposal was available.

63. The delegations of Austria, Egypt, Federal Republic of Germany, Italy, Poland, Sweden and Switzerland expressed their reservations concerning the use of colours in these meat products, while the Delegation of Denmark expressed a reservation against the use of erythrosine in these products.

64. The Committee decided to request the Commodity Committee to set a maximum level for Allura Red, and to postpone the endorsement on the use of Erythrosine, awaiting the JECFA evaluation. The Observer of the EC informed the Committee that the Scientific Committee for Food of the EC will be reevaluating erythrosine.

65. Several delegations (Federal Republic of Germany, Finland and Sweden) expressed their reservations concerning the use of phosphates in these meat products. The Delegation of Switzerland expressed the view that 5'-Guanylate, 5'-Inosinate, Agar, Carrageenan and Alginates should not be permitted in cooked cured ham and cooked cured pork shoulder. The Delegation of the Federal Republic of Germany reserved its position to the use of thickeners in these products. Also the Delegation of France expressed reservations concerning the use of Erythrosine, Allura Red and thickeners in these products. The Delegation of Finland objected against the use of natural and nature identical flavouring substances and phosphates. In a reply to these objections the Delegation of The Netherlands pointed out that governments had the possibility to accept Codex standards as recommended, with specified deviations.

66. The Committee agreed with the recommendations of the Secretariat, except for nitrites, iso-ascorbic acid, erythrosine and allurar-ed, for which the endorsements were postponed.

Codex Committee on Fish and Fishery Products

A. Proposed Draft General Standard for Quick Frozen Fish Fillet (Alinorm 89/18, Appendix VI, Step 5)

67. The Committee endorsed the provisions for the food additives and agreed to the proposal of the Secretariat that the maximum levels of phosphates should be expressed as 10 g/kg in the final product, to include the level of phosphates naturally present.

III Processed Fruits and Vegetables

Codex Standard for Table Olives 66-1981, Rev. 1, 1987

68. The Committee endorsed the food additive provision recommended by the Secretariat.

Use of Gum Acacia as a Carrier of Vitamin Compounds and Silicon Dioxide as an Anticaking Agent in Mineral salts and Vitamin Compounds for Use in Foods for Infants and Children

69. The Secretariat explained that the Codex Committee on Nutrition and Foods for Special Dietary Use (CCNFSDU) had requested this Committee to endorse the inclusion of Gum Acacia as a carrier of vitamin compounds and silicon dioxide as an anticaking agent for use in Canned Baby Food (CODEX-STAN 73-1981); Processed Cereal Based Foods for Infants and Children (CODEX-STAN74-1981), and Follow-up Formula (CODEX-STAN 156-1981).

70. The Committee endorsed the proposal.

Part II: Action Needed by CCFAC Resulting from Change in ADI Status of Food Additives

71. The WHO Secretariat made some corrections in the document the Committee had before it. The previous ADI for Enzymes derived from *Aspergillus Niger* should read 0-1; the previous ADI for canthaxanthin should read 0-25 T; the previous ADI for Turmeric Oleoresin should read 0-0.3 T and the present ADI for Ethyl Vanillin should read 0-5 T.

72. The Committee accepted the proposal of the Secretariat that as JECFA has withdrawn the ADI of canthaxanthin, the provisions for canthaxanthin in all Codex Standards should be withdrawn, awaiting the evaluation of new data by JECFA. The Delegation of Switzerland was of the opinion that this proposal should be postponed, since new toxicological data will be soon available.

73. Several delegations (Belgium, France, Netherlands) were opposed to the inclusion of 2-nitropropane as an extraction solvent in the inventory of processing aids. The Committee decided to remove 2-nitropropane from the inventory of processing aids.

74. The Committee accepted the proposal of the chairman that no action was necessary on ethyl vanillin since the ADI was only reduced from 0-10 to 0-5 and made temporary.

75. The Committee did not agree with the suggestion from JECFA that modified cellulose could be suggested for use in accordance with Good Manufacturing Practice although an ADI "not specified" was allocated to these compounds.

76. The Committee decided that the Commodity Committees concerned should consider the need for revision of maximum levels, in the light of an ADI not specified and that this Committee could give its view when revised standards became available.

Part III: Endorsement of Food Contaminant Provisions In Codex Commodity Standards

Draft General Standard for Vegetable Juices at step 6(Alinorm89/14, Appendix VII)

77. The Chairman of the Joint ECE/Codex Alimentarius Group of Experts on Standardization of Fruit Juices informed the Committee that this draft standard was actually at Step 6, and the figures on maximum levels for lead and tin were still under consideration by the Committee. Asterisks should be added in the text to reflect this status. In view of these discussions, the Committee agreed to postpone decisions. However, several delegations expressed concern on the high levels proposed for lead and tin in view of recent information concerning tin toxicity.

CONSIDERATION OF CLASS NAMES AND INTERNATIONAL NUMBERING SYSTEM
(Agenda items 8a and 8b)

78. The Committee had before it the report (CX/FAC 90/9-Add.1, Room Document) of the ad hoc Working Group on Class Names and the International Numbering System (INS) which was introduced by the Chairman of the Working Group, Mr. L.J. Erwin (Australia). The Working Group had considered documents (CX/FAC 90/9, CX/FAC 90/9-A and CX/FAC 90/9-B) which contained government responses submitted in reply to CL 1989/28-FAC.

79. The Committee was reminded that the 18th Session of the CAC had adopted the INS as a Codex Advisory Text while noting that the text would be an open one and proposals for inclusion of further food additives into the list would continue to be considered. The Commission had also noted that the purpose of the INS list was to provide internationally agreed numbers that could be used on food labels to identify food

additives and that the foreword and definitions for functional class titles would be elaborated, (paras 295-297, ALINORM 89/40). The CCFAC was informed that the INS list has been included in Volume I of the newly revised Codex Alimentarius.

Foreword to the INS List

80. The Committee proceeded to discuss the foreword section to the INS list as proposed by the Working Group and agreed that it be divided into four areas concerning background, composition, explanatory notes on the layout and the open nature of the list. The section concerning background was adopted by the Committee with the understanding that the phrase "functional class titles" would be used throughout the text for consistency, and that the paragraph concerning the recent actions of the Commission would be moved to this section.

81. Detailed discussions took place concerning the composition section of the proposed foreword in regard to the inclusion of substances on the INS list which may not meet the Codex definition for food additives. The Delegation of the Federal Republic of Germany, with support from the Delegation of Switzerland, the United Kingdom and the observer of the EEC, felt that the INS list should be restricted to only compounds meeting the Codex food additive definition as several current and proposed compounds on the list were often used for other purposes. Several delegations, including Egypt, were also concerned that there would be misunderstandings with the interpretation of the list as being one that is Codex approved and toxicologically cleared. The Delegation of the Federal Republic of Germany also requested that a procedure for deleting compounds be included as part of the amendment procedure.

82. The Delegation of the United States, with support from the delegations of The Netherlands, Denmark and Sweden, reminded the Committee that the list should remain open as decided by the Commission, and pointed out that the INS list may include compounds which are considered food additives by one or more member states and processing aids in other countries. The Committee was also reminded that the listing was for labelling purposes only, and did not address the issue of safety.

83. The Committee agreed to several amendments to the composition section of the INS foreword in order to clarify its use as an identification system for labelling purposes only for additives approved for use in one or more member countries. Inclusion of a substance on the list does not imply Codex approval.

84. The Committee agreed to adopt the section on explanatory notes of the proposed foreword with amendments indicating that modifications to existing INS numbers should only be made under exceptional and fully justified circumstances in order to avoid confusion for consumers and difficulties for industry. The Committee also agreed to adopt the section on the open nature of the list of the foreword with the understanding that a procedure for deletions of food additives or class titles be incorporated.

85. The proposed foreword, as endorsed by the Committee, is attached to this report as part of Appendix III, for forwarding and adoption by the Commission.

Definitions of class titles

86. The CCFAC discussed the definitions for bulking agents, emulsifiers, emulsifying salts, food acids, gelling agents and stabilizers.

87. The Committee agreed to endorse minor amendments to the definitions of emulsifying salts, gelling agents and stabilizers. The revised definitions are attached to

this report as part of Appendix III. The Committee also agreed to forward the definitions to the Commission for approval. The Committee will also inform the Codex Committee on Food Labelling about the revised definitions.

Functional Class Titles

88. The Committee agreed with the working group to delete references to "acidifier" and "food acid" in the possible list of class titles for acids, and decided that the term "acids" was the most meaningful word to consumers. The Committee also agreed to add a functional class title for "firming agents". The Committee decided to inform and request endorsement from the CCFL concerning the amended list of functional class titles.

Arrangement of the INS

89. The Committee agreed that the functional class titles (for labelling purposes), definitions and subclasses (technological functions) would all be included in one table in the endorsed format included in this report as part of Appendix III. The final format of the INS would consist of:

- Section 1: Foreword
- Section 2: Table of Functional Class Titles, Definitions and Technological Functions
- Section 3: International Numbering System for Food Additives in Numerical Order
- Section 4: International Numbering System for Food Additives in Alphabetical Order.

International Numbering System List

90. The Committee noted that the Delegation of Finland had proposed the inclusion of cellulase and Finland and Thailand had proposed the inclusion of the enzymes glucose isomerase and pectinase in the INS list. It was indicated that cellulase is allowed as flour treatment agent in Finland and glucose isomerase is used in the production of high fructose syrup. The issue was deferred pending the submission of additional information by Finland and Thailand. However, in view of earlier discussions concerning this issue, the Committee reaffirmed its decision that the list would remain open for compounds which may be considered as a food additive in only one member country. In addition, the Committee agreed that the following conditions must be met before a compound may be included in the INS list:

- 1) the compound must be approved by a member country as a food additive;
- 2) the compound must be toxicologically cleared for use by a member country;
and
- 3) the compound must be required to be identified on the final product label by a member country.

91. The Committee also agreed that the Commission, and especially individual member governments, should seek to ensure that the INS system be presented to the public in the best possible light. It was agreed that information campaigns directed to consumers are necessary to prevent misleading information being generated and distributed. It was noted that the recent adopted Codex document concerning "Information on the Use of Food Additives in Food" (CAC/MISC 1-1989) would be useful in disseminating the INS information accurately.

92. The Committee also agreed to the additions and numbering adjustments as proposed by the working group, individual delegations and the EC. These amendments are included as part of Appendix III to this report.

Status of the Class Names and International Numbering System

93. The Committee agreed that the proposed Foreword, Table of Functional Class Titles, Definitions and Technological Functions, and Amendments to the International Numbering System (See Appendix III) would be submitted to the 19th Session of the Commission for adoption. It was noted that these amendments would be added to Volume I of the Codex Alimentarius when revised.

94. The Committee thanked the Delegation of Australia and Working Group members for their efforts over the years. As the Working Group had accomplished its assignment, it was adjourned. However, it was noted that revisions to the INS list and functional class titles would be a standing Agenda Item for the Committee, as comments will be solicited through the use of a circular letter.

REVISION OF CODEX LIST B (Agenda Item 8c)

95. The Committee had before it document CX/FAC 90/2 when discussing this Agenda Item, and noted that Codex List B included those substances pending an evaluation by JECFA.

96. The Committee noted that the enzyme preparation catalase should be retained in List B.

97. The remainder of the list, as updated, was adopted by the Committee and is included in this report as Appendix IV.

CONSIDERATION OF PROCESSING AIDS (Agenda Item 9)

Government Comments on Inventory of Processing Aids

98. The Committee had before it document CX/FAC 90/12 containing the responses of Finland, UK, USA and MARINALG to CL 1989/16-FAC and CX/FAC 90/4-Add.1, containing the opinion of the Executive Committee on water treatment agents. Mr. Dodgen (USA) summarized the contents of both documents. Since there were no high residual levels in food known, no substances or categories of substances were suggested for evaluation by JECFA.

99. The Executive Committee had advised that water treatment agents applied to water used in food production would fall within the terms of reference of the Commission but are of low priority at the moment. The Committee decided that although a distinction could be made between water treatment agents and boiler water treatment agents, the matter was not of immediate interest and that it would not take further action.

100. The Delegation of the USA suggested that CCFAC might consider asking JECFA to elaborate specifications for ion-exchange resins. The observer of the IFG reminded the Committee that a document on this subject was being drawn up by the Council of Europe. The Delegations of Denmark, France, Italy and Canada supported the USA suggestion.

101. The Committee expressed its interest in the possible elaboration of these specifications, but decided to wait for their part of the Council of Europe before taking a final view on the matter. The Delegation of France pointed out that certain extraction solvents appear not to have been evaluated by JECFA.

102. The JECFA Secretariat informed the Committee that JECFA at its 35th session had expressed some concern about these substances. This concern urged an overall review of extraction solvents that will probably be undertaken at the next JECFA session. The Committee agreed that there was no need for JECFA to evaluate solvents as a category. Individual solvents could be treated following the normal procedures given under Agenda Item 15, Priority Evaluation of Food Additives and Contaminants.

103. The Committee then discussed how to update the inventory of processing aids. It was agreed that the inventory will be updated through the existing procedure of requesting comments and information from interested parties by means of a circular letter. The US delegation offered to maintain the inventory.

104. The Committee agreed to add to the inventory chitin/chitosan as proposed by MARINALG. It also agreed to extend the use of dimethylpolysiloxane to the manufacture of fats and oils in addition to that of beer.

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

105. The Committee had before it documents CX/FA 90/7 (Consideration of the Publication of JECFA and Codex Specifications), CX/FAC 90/7 Revised Annex (Updated Index of Codex Specifications, March 1990), and CX/FAC 90/7-Add.1 (Report of the Working Group on Specifications). The Working Group was chaired by Mr D. Dodgen (USA).

106. The JECFA Secretariat introduced the updated Index of Codex Specifications. He stated that this Index listed all JECFA Specifications; those that have been adopted as Codex Advisory Specifications are noted. Mr. Dodgen introduced the Working Group report which recognized the value of various publications FAO is planning in the specifications area for 1990.

107. The delegate from Australia pointed out that the updated Index of Codex Specifications listed many substances which were not strictly food additives. He suggested that the substances be identified in this Index as to whether they were food additives or processing aids. Then the nomenclature should agree with the Inventory of Processing Aids and the International Numbering System (INS) which could be used as a synonym. The JECFA Secretariat indicated that INS numbers have already been added to specifications for the new compendia.

108. In response to a question from the UK delegate, the JECFA Secretariat responded that this Index is for information only and is a working document for this Codex meeting only. It is not designed for further publication. Several delegations expressed the concern that the Index listing was headed "Food Additives" when in fact it includes processing aids and other substances. Australia pointed out that room documents such as this gain wide distribution as all meeting documents are often distributed to all interested persons in a country. The Codex Secretariat assured the Committee that this index is a working document only and that in future the word food additive will not be used. For those substances which have not yet been adopted as Codex Specifications the JECFA Secretariat suggested that the Committee may wish to divide the list containing those food additives which have not been adopted as Codex Advisory Specifications into three classes: 1) those specifications which can be referred immediately to member governments for comment; 2) those specifications which need updating and should be referred to JECFA; and 3) those specifications which should not be considered as Codex Advisory Specifications.

109. The Committee agreed that a circular letter will be issued to request Member Countries to review the list of food additives that presently do not have Codex Advisory Specification status and to identify those which they recommend be considered for Codex Advisory Status. The Working Group on Specifications will review the information received at its next meeting and assign the food additives to one of the three classes described in para 108.

110. The Committee agreed to the JECFA Secretariat's procedure regarding the future review of new JECFA specifications and publications of Codex Advisory Specifications:

1. New JECFA Specifications will be published in the JECFA compendium and simultaneously provided to Codex Contact Points.
2. Member governments will be requested by CL to review specifications and advise the Committee if the specification is suitable as a Codex Advisory Specification.
3. The replies will be considered by this Committee and a decision made at the next Committee meeting.
4. When JECFA Specifications are adopted as Codex Advisory Specifications, the holders of JECFA compendia would be reminded to make notation on their compendium copy. Editorial changes would also be noted.
5. Republication of a specification will incorporate any previously issued changes.
6. If JECFA revises a specification that is already adopted as a Codex Advisory Specification, the revised specification will not be considered Codex Advisory until it has undergone the usual Committee review and adoption by the CAC.

111. The Working Group reviewed all of the specifications contained in Food and Nutrition Paper 38 which represented the 31st and 33rd meetings of JECFA. The Working Group also considered the various comments received regarding these specifications as a result of a circular letter.

112. The specifications were divided into five categories: i) recommended for adoption without changes; ii) recommended for adoption with editorial or technical changes; iii) referred to JECFA for review because of necessary substantive changes; iv) specifications presently scheduled for JECFA review; and v) specifications which are tentative and may not be considered for Codex Advisory Specifications. During the discussion the delegate of New Zealand indicated that potassium bromate (category II) residues can be detected in finished baked products and stated that bromate should not be allowed. The delegate of Italy had reservations about paprika oleoresin (category II) and will submit comments to the Committee in a few months. The Committee agreed to send categories I and II (see Appendix V) to the CAC for adoption. JECFA will review categories III to V.

113. The Committee agreed to the Working Group proposal that analytical procedures for the identification of source microorganisms for enzymes will be referred to JECFA for future enzyme evaluations.

114. The Committee expressed its appreciation to the JECFA Secretariat and Dr. Kenji Ishii, (consultant to FAO) for the enormous amount of work in preparing the

compendium on specifications and for suggesting a procedure whereby this Committee could continue its review of JECFA specifications.

115. The Committee expressed its appreciations for the work of the Working Group and reinstated it under the Chairmanship of Mr. D. Dodgen (USA) with the same membership: Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Switzerland, UK, EEC, IFG, ISO, MARINALG, and FAO.

REGULATION OF AFLATOXIN IN FOOD AND FEED (Agenda Item 11)

116. The Committee had before it the report of the ad hoc Working Group on Mycotoxins (CX/FAC 90/18-Add. 1, Room Document) which was introduced by the Chairman of the WG Mr. W.J. de Koe (The Netherlands). The WG had reviewed the comments from governments in response to CL 1989/16-FAC and CL 1989/38-FAC contained in documents CX/FAC 90/18, 90/18A and 90/18B on:

- relationship between levels of aflatoxin B₁ and total aflatoxins (B₁ + B₂ + G₁ + G₂);
- sampling plans for aflatoxins;
- proposed Guideline levels for aflatoxin in food and feed; and
- analytical techniques for determination of aflatoxins.

117. The Chairman of the WG informed the Committee that there was considerable disagreement among governments on these issues.

Expression of the Content of Aflatoxins in Peanuts and Other Foods

Total Aflatoxin vs. Aflatoxin B₁

118. The Committee noted that the expression of levels of aflatoxin in food in national regulations varied widely. There is an urgent need to harmonize the expression of aflatoxin levels in food. It also noted from the comments of several countries that the proportion of aflatoxin B₁ to total aflatoxins varies substantially among different food commodities.

119. The Committee agreed with the conclusions of the WG that aflatoxins in food should be expressed as total aflatoxins and not as aflatoxin B₁ alone. In doing so, it noted from the report of the WG that the analytical reference techniques used for determining aflatoxin B₁ also determines aflatoxins B₂, G₁ and G₂.

120. Reservations to expressing the level as total aflatoxins were made by France and Austria. The Delegation of France informed the Committee that aflatoxin B₁ is the most toxic among the different aflatoxins and that in its view, expression of aflatoxins as B₁ alone would provide the correct judgement for assessment of risk.

121. The Delegation of Switzerland informed the Committee that the Committee's decision to express aflatoxins as total and not as B₁ alone would not preclude governments from having separate tolerances for

- i) aflatoxin B₁, and
- ii) total aflatoxins.

Sampling Plans for Aflatoxins

122. The WG at its meeting had extensively discussed sampling plans for export control of peanuts and other bulk commodities. However, the Committee noted that a

minimum sampling procedure to be used by the import control authority should be established. Taking into account information available on the distribution of aflatoxin in shelled peanuts (the most-studied case) and other commodities, the Delegation of The Netherlands stated that for this import inspection a sample weight of at least [3 kg] is necessary in order to obtain results which are representative of the average aflatoxin content of the lot. If the sample size is increased the probability of accepting lots with an aflatoxin concentration above the specified maximum level would be decreased. The controlling authority in the importing country should decide on the basis of its control policy, what probability would be acceptable.

The Delegation of the USA expressed concern that by specifying only a minimum sample size there might be a variability in the enforcement procedures, possibly becoming excessively strict if very large sample sizes were taken. The Delegation expressed its opinion in favour of a fixed sample size. The Committee, however, did not support this view.

123. The Committee agreed with the proposal of the WG to specify a minimum sample size of [3 kg] for a lot of at most 25 000kg and noted that the sampling plans proposed referred to bulk samples like peanuts. The Committee held the view that smaller sample sizes would suffice for homogeneous lots.

124. The Committee agreed that the views of governments should be sought on the proposed sampling plans for the import inspection on aflatoxins by means of a circular letter.

125. While the WG had discussed problems associated with sampling plans for export, the Committee agreed that this matter should be brought to the attention of all Codex Commodity Committees for developing Codes of Practice.

Maximum Levels of Aflatoxins in Foods

126. The Committee noted from the report of the Working Group that wide diversity of opinion existed concerning maximum levels for aflatoxins as they were applied under different national regulations. According to the evaluations carried out by toxicologists in Denmark, a level of 1 $\mu\text{g}/\text{kg}$ total aflatoxin might be appropriate. However, such a level would be inappropriate and impractical for international trade.

127. The Committee discussed the proposal of the WG to establish a maximum (statutory) level of 10 $\mu\text{g}/\text{kg}$ of total aflatoxins for all foods (excluding milk and dairy products) moving in international trade, based on a minimum sample of [3 kg] of food concerned. The Committee, however, noted that national tolerances for aflatoxin in food varied significantly from 35 $\mu\text{g}/\text{kg}$ to 1 $\mu\text{g}/\text{kg}$, and it is essential that, if international trade is to be protected, a compromise level should be agreed upon. It noted that the level of 10 $\mu\text{g}/\text{kg}$ total aflatoxin was a reasonable compromise. The Committee noted that in countries where national tolerances lower than 10 $\mu\text{g}/\text{kg}$ prevail, this could be achieved by technological means.

128. Some countries expressed the view that a proposal of one level of aflatoxin for all foods is not realistic. Czechoslovakia proposed that a level of 10 $\mu\text{g}/\text{kg}$ could be considered for nuts and oil seeds and a lower level of 5 $\mu\text{g}/\text{kg}$ for grains. The Delegation of Italy was of the opinion that the level of aflatoxin in peanuts should be below 5 $\mu\text{g}/\text{kg}$.

129. The Delegations of Malaysia, Thailand and The Philippines stated that the level of 10 $\mu\text{g}/\text{kg}$ was too low and would be disruptive to international trade. Brazil stated that

any level should be linked to an appropriate sampling plan and recognized method of analysis.

130. The Committee while noting that certain developing countries wanted to have higher tolerances established for aflatoxin in food expressed the view that 10 µg/kg total aflatoxin in food was a reasonable compromise (Appendix VI) and agreed that the views of governments should be sought on the proposed level by means of a circular letter.

131. The Committee agreed that this limit should be periodically reviewed with the objective of reducing it when this became practical in international trade.

Methods of analysis

132. The Committee noted that several alternative methods were available which were able to quantify total aflatoxins satisfactorily at a level of 10 µg/kg. Thin-Layer Chromatography (TLC) methods are the methods of choice in developing countries and HPLC methods are used elsewhere. Enzyme-Linked Immuno-Sorbent Assay (ELISA) techniques can be used with advantage for use as screening methods.

133. The Committee noted that the HPLC method discussed by the WG (see Appendix VI) was ringtested only by two laboratories and was not a fully validated method. Therefore this method cannot be accepted as a Codex reference method without further validation. It also noted from the report of the WG that there were problems with interference from certain components of animal feed mixtures (especially citrus pulp) in HPLC-based methods.

134. The Committee noted that all other AOAC methods based on TLC (Appendix VI) were fully validated methods and could be accepted as reference methods.

135. The Delegation of Denmark informed the committee that the limit of detection in the TLC methods presently available was about 10 µg/kg on total aflatoxin and that more accurate TLC methods with limits of detection of 1 µg/kg were under elaboration.

Aflatoxin in Animal Feeds

136. The Committee noted from the report of the WG that compounded feedstuffs were not widely traded internationally, and it questioned whether it was useful to establish codex maximum or guideline levels for these commodities. There was considerable doubt whether the proposed guideline levels contained in Appendix VIII to ALINORM 89/12 (with corrigendum) were adequate to guarantee safe use of the various commodities as feed ingredients.

137. Aflatoxin contaminated materials could be safely fed to certain animals provided that procedures such as blending (to reduce the overall intake) or decontamination were used. This is a productive use of commodities which would otherwise be rejected or condemned. It was also considered essential that strict control be maintained to ensure that food products for human use would contain the lowest levels of aflatoxin technically achievable keeping in mind the need to maintain an adequate food supply.

138. The Committee noted that there is a relation between the Aflatoxin B₁ intake from feed for dairy cattle and the resulting level of aflatoxin M₁ in milk. The Committee agreed with the views of the WG that this was the most sensitive case, and the only one creating a serious problem. It considered it appropriate to establish levels for aflatoxin B₁ in feed for cattle that would result in acceptable levels of aflatoxin M₁ in milk.

139. The observer from IDF informed the committee that the acceptable level of aflatoxin M₁ in milk was around 0.05 µg/kg and that there was a tendency among some governments to set lower levels of 0.01 µg/kg for milk meant for infant foods.

140. The Committee noted that 10 µg/kg aflatoxin B₁ in feed proposed by the WG would lead to levels of aflatoxin M₁ in milk higher than 0.05 µg/kg.

141. The Committee noted that the milk committee at its next session in November 1990 would be considering the subject of aflatoxin M₁ in milk. The Committee agreed to seek the advice of the milk committee on i) Practical levels of aflatoxin M₁ in milk, ii) Relation of level of aflatoxin M₁ in milk to aflatoxin level of B₁ in feed and iii) Availability and sensitivity of analytical methods for determining of M₁ in milk.

142. The Committee agreed to forward the advice received from the Milk Committee to JECFA for its opinion on acceptable levels of aflatoxin M₁ in milk.

143. The Committee also agreed to send the guideline levels proposed by the WG of 10 µg/kg B₁ for feed, enclosed in square brackets (Appendix VI) for comments to governments through a circular letter and seek information from governments on:

- i) measures taken by governments to control levels of aflatoxin M₁ in milk;
- ii) measures taken by governments to control levels of aflatoxin B₁ in feed, (not exclusively dairy feed);
- iii) information on relationship between intake of aflatoxin from feed by dairy cattle and content of aflatoxin M₁ in milk.

The Committee understood that the establishment of tolerances for aflatoxin in feed for animals meant for nondairy purposes would be rather difficult.

ISO Draft Specification for Peanuts

144. The Committee considered the aflatoxin limits contained in the draft ISO Specification for Peanuts. The Committee decided that the limits were inappropriate since the international responsibility for the protection of consumers health and international trade in foods rested with the Codex Alimentarius Commission. It recommended that the Secretariat advise ISO of this and the outcome of the Committee's current proposals concerning aflatoxin in foods.

Future Work

145. The Committee noted that JECFA had established a PTWI of 7 µg/kg b.w. for patulin at its 35th Session. Ochratoxin will be evaluated at its 37th Session in June 1990. It agreed to seek the views of governments on the need to establish Codex maximum levels for patulin and ochratoxin and collect all information from governments on these and other mycotoxins.

Reinstatement of the WG

146. The Committee expressed its appreciation for the work of the WG and reinstated the WG under the chairmanship of The Netherlands. The following countries and organizations indicated their interest to participate in the group: Australia, Belgium, Brazil, Canada, Denmark, Egypt, Fed. Rep. of Germany, Finland, France, Italy, Japan, Malaysia, The Netherlands, New Zealand, Norway, Portugal, Spain, Switzerland, Sweden, Thailand, UK, USA, EEC, AOAC, IDF and ICC.

REGULATION OF INDUSTRIAL AND ENVIRONMENTAL CONTAMINANTS IN FOOD (Agenda Item 12)

a) Guideline Levels for Cadmium and Lead in Food (Agenda Item 12a)

147. The Committee had before it documents CX/FAC 90/18-Add.3 and CX/FAC 90/18-Add.3a, which contained a summary of comments submitted in response to CL 1989/16-FAC. The Chairman of the Working Group on Guideline Levels, Dr. A. Hallikainen (Finland), informed the Committee that the Working Group had noted that Codex maximum levels for lead had been established for many individual food commodities and that also maximum levels for cadmium had been considered in many countries.

148. The Working Group also noted that the Executive Committee (CCEXEC) would shortly be examining the definitions and use of guidelines (advisory) and limits (mandatory) and their consequences for trade. The Working Group had agreed that the establishment of limits for cadmium and lead would be difficult in view of regional differences in contaminant levels and national regulations.

149. The Working Group noted that if there were only minor trading problems associated with these contaminants, the establishment of limits may be unnecessary and could actually create barriers to trade. The Working Group recommended to postpone the further discussions on the establishment of guideline levels for cadmium and lead.

150. The Delegation of Sweden suggested that alcoholic beverages, especially wines, should be included since they are important sources of lead intake. The Delegation of Australia noted that the "Office International de la Vigne et du Vin" should be contacted to provide information in this regard. The request for information on levels of lead in wine was supported by the Delegations of Australia and Denmark.

151. The Delegation of Denmark proposed that the use of lead capsules on wine bottles should also be examined as a source of lead in the wine. The Delegation of Denmark also requested that the circular letter should include a request for information on which canned foods are creating trade problems. When reporting this data on canned foods, the date of the study should be included.

152. The Delegation of Sweden supported the Danish proposal and reminded the Committee that Codex maximum levels for lead in some food commodities, e.g. fruit juices and sugar, had already been established.

153. The Chairman of the Joint FAO/ECE Group of Experts on Fruit Juices confirmed the existence of maximum levels for lead in many standards of this Committee, but noted that these were still open for revision and could only be used in connection with a sampling plan.

154. The Delegation of The Netherlands, stressed the need for a description of enforcement measures undertaken as well as national definitions for limits or levels, and the need to focus on primary agricultural products.

155. The Delegation of Switzerland was of the opinion that difference should be made between contaminants of technological origin and those coming from the environment. In the last case, it is justified to set up guideline levels for food instead of maximum levels.

156. The Delegation of Australia pointed to the existence of data on levels of tin and lead in processed fruits and vegetables and cereals and cereal products as a result of extensive government surveys, carried out by the CCPFV and CCCPL. These levels should be included in the CL so that governments can comment on the levels.

157. The Delegation of the Federal Republic of Germany, supported by Australia, suggested that Codex should take into consideration at what age livers and kidneys of animals should be declared not fit for human consumption, because lead and cadmium levels increase with the age of the animal.

158. The Committee decided to send out a circular letter containing a list of levels for lead and cadmium in existing Codex standards and request information on national regulations, methods of compliance and enforcement of these national regulations, any supporting information relating to intake data and indications of whether or not these national regulations have caused problems in trade. It was agreed that the Secretariat would prepare a discussion document for the next session on the basis of information received from the CL.

b) Guideline Levels for Methylmercury in Fish (Agenda Item 12b)

159. The Secretariat introduced document CX/FAC 90/18-Add.4, which summarized responses received on Circular Letters 1989/16-FAC and 1989/41-FAC. The Committee was advised that a choice could be made between two options. The proposed guideline levels for methylmercury in fish could be maintained as two guidelines for fish and predatory fish or simply stated as a single guideline for all fish. It was also stressed that the establishment of different maximum levels for various fish species could lead to technical barriers to trade.

160. The Delegation of Sweden reminded the Committee that the CAC had adopted the two guideline levels for methylmercury in fish and predatory fish at step 5 and advanced them to step 6. The CAC agreed that the CCFAC should continue with the step procedure. Since there are already different legal limits in many countries, a guideline level for methylmercury in fish is necessary to prevent barriers to trade.

161. The Secretariat clarified the CAC's position on this item by pointing out that the Commission had also expressed the view that the Codex Committee for Fish and Fishery Products (CCFFP) should review the CCFAC's guideline level for methylmercury and advise the CAC whether these guideline levels are practical and based on sound scientific principles.

162. The Delegation of the USA was of the opinion that there was no need to adopt a two level guideline system, and favoured a single level guideline for methylmercury in conjunction with established methods of analysis and sampling.

163. The Delegations of The Netherlands and Australia stressed the lack of agreement on the identity and taxonomic classification of species to which individual limits should be assigned and were therefore in favour of a single guideline level.

164. Several delegations commented on the feasibility of relating the maximum levels to methylmercury alone rather than total mercury. The Delegation of the Federal Republic of Germany pointed to analytical difficulties in the analysis for methylmercury, compared to the analysis for total mercury.

165. The Committee decided that the two guideline levels for methylmercury in fish and predatory fish could be advanced to step 8 for adoption by the CAC with the understanding that the CCFFP's advice would be sought on the practicability of the two guideline levels and the appropriateness of analysing for methylmercury alone as opposed to total mercury. The draft guideline levels for methylmercury in fish, as currently elaborated for fish in general and for predatory species, is attached to this report as Appendix VIII.

PACKAGING MATERIALS (Agenda Item 13)

166. The Committee had before it working papers CX/FAC 90/11, CX/FAC 90/11-Add.1 and CX/FAC 90/11 Add.2 which summarized government comments submitted in response to CL 1989/16-FAC and CL 1989/41-FAC.

167. The Committee noted that the recent 18th Session of the CAC had adopted the guideline levels for vinylchloride monomer (VCM) and acrylonitrile (ACN) in foods and food packaging materials. The guideline levels were circulated for comment at step 6 (CL 1989/41-FAC) in order to request information on sampling plans and methods of analysis for the estimation of these contaminants.

168. The Delegation of the United States reiterated its position that while it had no opposition for the advancement of the guideline levels to Step 8, it would not be in a position to accept the guideline levels without suitable sampling plans and validated methods of analysis. The Committee was reminded that the EEC had submitted their directives concerning methods of analysis for vinylchloride (31/432/EEC) and vinylchloride monomer (80/766/EEC) to the Secretariat.

169. The Committee agreed to advance the draft guideline levels for VCM and ACN in foods and food packaging materials to step 8 for adoption by the Commission, with the understanding that the Secretariat would request ISO and/or AOAC to elaborate appropriate sampling plans and methods of analysis.

170. The Delegation of Egypt noted that Polyvinylchloride and other packaging materials caused many problems in the area of environmental pollution which should be taken into consideration by the Committee.

NATIONAL STRATEGIES FOR THE CONTROL OF CERTAIN CONTAMINANTS IN FOOD (Agenda Item 14)

A. Dioxins (Agenda Item 14a)

171. The Committee had before it document CX/FAC 90/20, prepared by the USA.

172. In introducing the document, Mr. Ronk on behalf of the US Delegation, pointed out that the last Session of the CCFAC had requested the USA to prepare a paper on national strategies for the control of dioxins in food and food contact materials. Mr. Ronk explained that he did not have government comments for preparing this document, instead he relied on published literature, as well as data in the files of the US - Food and Drugs Administration and the Environmental Protection Agency. He emphasized that the paper had not been circulated for government comments.

173. He drew the attention of the Committee to the different types of related compounds belonging to the group of dioxins, which are of safety concern, the polychlorinated dibenzo-para-dioxins (the PCDD's) and the poly-chlorinated dibenzo-para-furans (the PCDF's). Of these 2, 3, 7, 8 tetra-chloro-dibenzodioxin (TCDD) is considered the most toxic.

174. It was noted that in regard to national strategies, most Governments concentrate their efforts on identifying and controlling the sources of dioxin emissions in the environment rather than controlling the food by setting maximum levels for dioxins. The Committee may, however, consider setting a limit for paper board milk cartons in order to obtain a nondetectable residue level in milk.

175. Mr. Ronk explained that it is difficult to obtain data on residue levels of dioxins in food since this requires very specialized equipment and expensive analysis. However,

Government findings from several countries show that 80 - 90% of human exposure to dioxins results from food.

176. He pointed also to the differences in toxicological opinions about dioxin exposures which have been expressed in some countries as a modified ADI or Virtually Safe Dose Levels. He informed the Committee that at least 2 countries, the USA and Canada have national limits for dioxins in one or more food commodities.

177. In summarizing his research he concluded that it will be very difficult at this time to establish limits for dioxins in food for international trade. In his view efforts should be primarily directed as much as possible towards eliminating the emission of dioxins at the source points.

178. Several delegations expressed support for the views of the USA with regard to the concern about the possible contamination of food with dioxins. They also stressed the importance of establishing control measures at the different source points, e.g. waste incinerators, paper board, etc. Commodities that are most likely to be contaminated with dioxin are fish, milk and other products of animal origin. However, extensive surveys on food contamination by dioxin have not been done due to the costs involved.

179. The Delegation of Sweden, referring to a recent toxicological evaluation by a Nordic Expert Group, pointed out that Sweden had analytical data available to submit to the Committee. The Expert Group had suggested a provisional tolerable weekly intake of 35 µg/kg body weight expressed as TCDD equivalents.

180. The JECFA Secretariat drew the attention of the Committee to a publication on dioxins in the Environmental Health Criteria Series, which will be published this year. He was of the opinion that these data may form the basis for a JECFA toxicological evaluation.

181. The Delegation of The Netherlands informed the Committee of a conference on the toxicology of dioxins which is scheduled to be held at the end of 1990 in The Netherlands.

182. The observer of the European Community informed the Committee about several regulations of the Community aimed at reducing the emission of dioxins into the environment. He also informed the Committee that the Scientific Committee for Food of the EC will evaluate dioxins in the near future.

183. The Committee agreed with the concerns expressed by the delegations about the possible contamination of food with dioxins. It was however of the opinion that more information was needed and decided to send a circular letter requesting information from governments and international organizations on national strategies for the control of dioxins and on residue levels of dioxins in food. The CL would also emphasize the importance of controlling the source of emissions for dioxins. It was emphasized that in supplying analysis data of dioxins it is important to define what values of toxicity equivalents are used. The information will be discussed at its next session.

184. The Committee agreed to put dioxins on the List for the Priority Evaluation of Food Additives and Contaminants by JECFA.

B. Polychlorinated Biphenyls (Agenda Item 14b)

185. The Committee had before it CX/FAC 90/20-Add.1 as prepared by The Netherlands Delegation, which summarized the present situation regarding PCB's. Reference was also made to CCPR document CX/PR 84/10 which was a study focussing on approaches to controlling PCB's. The document was introduced by Mr.

Kloet (The Netherlands) who reminded the Committee that the subject was referred to CCFAC by the CCPR.

186. It was indicated that no definite guidance had been given by JECFA concerning toxicological aspects of PCB's mainly because of the existence of various PCB congeners. Differences in methods of analysis were noted as some were based on total PCB content whereas others differentiated between various congeners.

187. National strategies placed emphasis on reduction of PCB emissions and eventually the phasing out of the use of PCB's. It was stated that PCB substitutes e.g. Ugilec should also be further toxicologically evaluated. It was reported that national guidelines presented in the document could give rise to international trade problems. Therefore, it was concluded that a basis exists to recommend the elaboration of guideline levels even in the absence of a PTWI from JECFA.

188. The Delegation of Denmark suggested that the Committee reconsider this report at its next session in order to allow more time for discussion with national experts. This suggestion was supported by Sweden and Switzerland.

189. The Swedish Delegation asked whether JECFA was providing a toxicological monograph on this subject. The JECFA Secretariat stated that no toxicological monograph will be published since there will be an Environmental Health Criteria publication on this subject this year.

190. The Committee agreed that document CX/FAC 90/20-Add.1 would be used for further consultation with national experts and that this issue would be placed on the agenda for the next session.

Draft Questionnaire on Certain Contaminants (Benz(a)pyrene, Hydrogen Cyanide, DEHP and Ethyl Carbamate) (Agenda Item 14c)

191. The Committee had before it Conference Room Document CX/FAC 90/20-Add.2 which was the revised questionnaire concerning this subject as prepared by a drafting group consisting of The Netherlands, the United States and Denmark. It was agreed that this questionnaire will be circulated for comments.

PROPOSALS FOR THE PRIORITY EVALUATION OF FOOD ADDITIVES AND CONTAMINANTS BY JECFA (Agenda Item 15)

192. The Committee had before it documents CX/FAC 90/21 (Room Document) and App. XI, Alinorm 89/12A.

193. The Committee noted that all the food additives and the contaminants Benz(a)pyrene and ochratoxins that were listed in Appendix XI, Alinorm 89/12A would be evaluated by the 37th meeting of JECFA to be held in Geneva, June 1990. The contaminants nitrite, nitrate and nitrosamines proposed by The Netherlands; solanine, proposed by Finland and cyanogenic glucosides proposed by the Secretariat would remain on the priority list for evaluation by JECFA.

194. The Delegation of Denmark proposed the following list of food additives for evaluation:

- nitrogen - specifications only;
- pectins - specifications only;
- thermally oxidized soyabean oil;

- thermally oxidized soya bean oil interacted with mono- and diglycerides of food fatty acids;
- sorbitan tristearate - specifications only.

The Observer from IPPA stated that the specifications for pectin were adequate.

195. The Committee was informed that the Codex Coordinating Committee for Asia at its 7th Session had proposed calcium-disodium EDTA for priority evaluation by JECFA.

196. The Delegation of the Democratic People's Republic of Korea proposed cyclodextrin for evaluation by JECFA.

197. The Secretariat proposed safety assessment of the ammoniation process to reduce aflatoxin levels in food and feed for priority evaluation by JECFA noting that such an evaluation would provide guidance to the Committee to offer advice to the Intergovernmental Group on Oil Seeds, Oils and Fats. The Committee noted that none of the member governments present at this session had new data on cyclodextrin, calcium-disodium EDTA or the ammoniation process to reduce aflatoxin levels in food and feed (from a safety point of view) to provide to JECFA. The Committee agreed to send a circular letter requesting any existing data that may be available with other governments and international organizations.

198. The CCFAC proposed dioxins for priority evaluation.

199. The Delegation of the Federal Republic of Germany proposed the glazing agents: bees wax, benzoin gum, candelilla wax, carnauba wax, shellac and hydrocarbon wax, ortho-phenylphenol, carrageenans (immunological aspects) and the contaminants, 1,3-dichloro-2-propanol, and 3-chloro-1,2-propanediol for priority evaluation. The Committee was informed that new data would be made available.

200. The Delegations of Italy and Australia proposed for evaluation lysozyme, an enzyme used in cheese in place of nitrates to prevent abnormal fermentation.

201. The Delegation of the UK, supported by the Delegation of France, requested that on the basis of new data from a human study carried out at Edinburgh University, the toxicological assessment of alginates which had been carried out in the mid-70s should be considered. The Committee agreed with this proposal.

202. The Delegation of USA proposed konjac flour, which is used as a stabilizer, for evaluation. The USA Delegation agreed to make data available to JECFA.

203. The Delegation of New Zealand informed the Committee that it had sufficient data to show that potassium bromate when used in flour for bread making leaves significant amounts of residues in the bread. On this basis the Delegation of New Zealand proposed that JECFA reevaluates potassium bromate in bread.

204. The Committee noted the financial constraints of both FAO and WHO in organizing JECFA meetings. Additional meetings would be needed to evaluate the large number of food additives that have been proposed for priority evaluation. The Committee expressed concern and agreed to discuss the subject at its next session on the basis of a paper to be prepared by JECFA Secretariat.

205. The food additives and contaminants proposed by the Committee for priority evaluation by JECFA are given in Appendix VII.

FUTURE WORK (Agenda Item 16)

206. The Committee did not have a document for its consideration as items relating to future work are contained elsewhere in this report. However, the Committee was informed that the issue of biotechnology will be discussed at a Joint FAO/WHO Consultation in Geneva (5-9 November 1990), as well as at the Joint FAO/WHO Conference on Food Standards, Chemicals in Food and Food Trade (Rome 18-27 March 1991). Novel foods will also be discussed at the Conference.

OTHER BUSINESS (Agenda Item 17)

207. There was no other business proposed for the Committee's consideration.

DATE AND PLACE OF NEXT SESSION (Agenda Item 18)

208. The Committee noted that its next Session will be held in The Hague, The Netherlands, from 4-9 March 1991. The Working Group meetings will be held on 1 March 1991.

SUMMARY STATUS OF WORK

Subject Matter	Step	For Action by:	Document Reference
Consideration of JECFA Reports	-	23rd CCFAC	Continuing Activity
Report of the Joint FAO/WHO/ UNEP Food Contamination Monitoring Programme	-	23rd CCFAC	Continuing Activity
Matters arising from Codex Sessions	-	23rd CCFAC	Continuing Activity
Guideline Levels for Radio- nuclides in Food	-	37th CCEXEC 23rd CCFAC	ALINORM 91/12, para. 26
Proposals for General Provisions for the Use of Food Additives in Standard- ized and Non-Standardized Foods	-	a) Governments b) 23rd CCFAC c) 19th CAC	ALINORM 91/12, para. 36 ALINORM 89/12A (Paras 39-53)
Endorsement of Maximum Levels for Food Additives and Contaminants in Codex Commodity Standards and Revision of Previous Standards	-	23rd CCFAC	Continuing Activity
Intake of Food Additives and Contaminants	-	a) Governments b) 23rd CCFAC	ALINORM 91/12, para 41
Consideration of Class Names	-	23rd CCFAC	ALINORM 91/12, (Para 94)
Consideration of International Numbering System	-	a) Governments b) 23rd CCFAC c) 19th CAC	ALINORM 91/12, (Para 94)
Revision of Codex List B	-	a) Governments b) 23rd CCFAC	Continuing Activity
Inventory of Processing Aids	-	a) Governments b) 23rd CCFAC	ALINORM 91/12, (Para 103)
Consideration of Specifications for the Identity and Purity of Food Additives	--	a) Governments b) 23rd CCFAC	Continuing Activity
Regulation of Aflatoxin in Food and Feed	-	a) Governments b) 23rd CCFAC c) 19th CAC	ALINORM 91/12 (Paras 123,130,143)
Guideline Levels for Cadmium and Lead in Food	-	a) Governments b) 23rd CCFAC	ALINORM 91/12 (Para 158)
Guideline Levels for Methyl Mercury in Fish	8	19th CAC	ALINORM 91/12 (Para 165)
Guideline Levels for VCM and and ACN in Food and Packaging Materials	8	19th CAC	ALINORM 91/12 (Pa RA 169)
National Strategies for the Control of Certain Contaminants in Food			
i) Dioxins		a) Governments b) 23rd CCFAC	ALINORM 91/12 (Para 183)

ii) PCBS		23rd CCFAC	ALINORM 91/22 (Para 190)
iii) Other Contaminants, Benza(a)pyrene, Hydrogen Cyanide, DEHP and Ethyl Carbamate	-	a) Governments a) 23rd CCFAC	ALINORM 91/12 ALINORM 91/12) (Paras 191)
Food Additives for Priority Evaluation by JECFA	-	a) Governments b) 23rd CCFAC	Continuing Activity

ALINORM 91/12
APPENDIX I

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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 delegations, los Supletes, Asesores y Consultores aparecen por orden alfabético.

ALINORM 91/12
APPENDIX II

ENDORSEMENT OF MAXIMUM LEVELS FOR FOOD ADDITIVES
IN CODEX COMMODITY STANDARDS

This Appendix summarizes all provisions which were considered by the Codex Committee on Food Additives and Contaminants at its 22nd Session.

Abbreviations Used

E	= Endorsed
TE	= Temporarily Endorsed
EP	= Endorsement Postponed for reasons given in the footnotes
Limited by GMP	= Limited by Good Manufacturing Practice
NE	= Not Endorsed

Contents

	<u>Committee/Commodity</u>	<u>Session</u>	<u>Document</u>
I	Processed Meat and Poultry Products	14th	ALINORM 89/16
II	Fish and Fishery Products	18th	ALINORM 89/18
III	Processed Fruits and Vegetables		ALINORM 87/20

I. PROCESSED MEAT AND POULTRY PRODUCTS
DRAFT REVISED CODEX STANDARD FOR CORNED BEEF (ALINORM 89/16,
APPENDIX V)

<u>Food Additive</u>	<u>Maximum Level in the Finished Product</u>	<u>Paragraph</u>	<u>Status of Endorsement</u>
Potassium and/or sodium nitrite ¹	50 mg/kg	60	TE
Potassium chloride	limited by GMP	60	E
Ascorbic acid/Na ascorbate	300 mg/kg	60	E

¹ The maximum ingoing amount is 100 mg/kg total nitrite expressed as sodium nitrite.

DRAFT REVISED CODEX STANDARD FOR LUNCHEON MEAT (ALINORM 89/16, APP. VI) DRAFT REVISED CODEX STANDARD FOR COOKED CURED CHOPPED MEAT (ALINORM 89/16, APP. IX)

Food Additive	Maximum Level in the Finished Level	Paragraph	Status of Endorsement
Potassium and/or sodium nitrite ²	[125 mg Ag]	61, 62	EP ¹
Potassium chloride	Limited by GMP	66	E
Ascorbic acid/Na Ascorbate	300 mg/Kg (expressed as ascorbic acid) singly or in combination	66	E
[Iso ascorbic acid and Na Salt]		61,62	EP ³
Natural flavouring substances and nature-identical flavouring substances defined in Codex Alimentarius	Limited by GMP	65	TE
5'-Guanylate, disodium	50 mg/kg	65, 66	E
5'-Inosinate, disodium	50 mg/kg	65, 66	E
Monosodium glutamate	Limited by GMP	66	E
Glucono-delta-lactone	300 mg Ag	66	E
Sodium Citrate	Limited by GMP		
Added phosphates (mono-, di- and poly-) Na & K salts ⁴	3 000 mg/kg (expressed as P ₂ O ₅) singly or in combination ⁵	66 65, 66	E E
Erythrosine	15 mg/kg	64, 65	EP ³
Allura Red	x mg/kg	61, 62, 64, 65	EP ¹

¹ EP, awaiting a final recommendation on the max. level by the Commodity Committee.

² The maximum ingoing amount is (200 mg/kg) total nitrite expressed as sodium nitrite.

³ EP, awaiting an evaluation of JECFA.

⁴ Should read as phosphates.

⁵ Should be 3 000 mg/kg + amount of phosphates naturally present in the finished product

DRAFT REVISED CODEX STANDARD FOR COOKED CURED HAM (ALINORM 89/16, APP. VII) DRAFT REVISED CODEX STANDARD FOR COOKED CURED PORK SHOULDER (ALINORM 89/16, APP. VIII)

Food Additive	Maximum Level in the Finished Level	Paragraph	Status of Endorsement
Potassium and/or sodium nitrite ¹	[125 mg Ag] (Temp.)	61, 62	EP ²
Potassium chloride	Limited by GMP	66	E
Ascorbic acid/Na ascorbate	300 mg/kg singly	66	E
[Isoascorbic acid and Na salt]	or in combination	61, 62	EP ³
Natural flavouring substances and nature identical flavouring substances defined in the Codex Alimentarius	Limited by GMP	65, 66	TE
Smoke flavourings as evaluated by JECFA	Limited by GMP	66	TE
5'-Guanylate, disodium	50 mg/kg	65, 66	E
5'-Inosinate, disodium	50 mg/kg	65, 66	E
Monosodium glutamate	Limited by GMP	66	E
Sodium Citrate	Limited by GMP	66	E
Added phosphates (mono-, di- and poly-) Na and K salts ⁴	3 000 mg/kg (expressed as P ₂ O ₅) singly or in combination ₅	65, 66	E
Agar	Limited by GMP	65, 66	E
Carrageenan			
Alginates/Na and/or K salts	10 g/kg	65, 66	E

¹ The maximum ingoing amount is [200 mg/kg] total nitrite expressed as sodium nitrite.

² EP, awaiting a final recommendation on the max. level by the Commodity Committee.

³ EP, awaiting an evaluation of JECFA.

⁴ Should read as phosphates.

⁵ Should be 3 000 mg/kg + amount of phosphates naturally present in the finished product.

II FISH AND FISHERY PRODUCTS
PROPOSED DRAFT GENERAL STANDARD FOR QUICK FROZEN FISH FILLET
(ALINORM 89/18, APP. VI)

Food Additive	Maximum Level in the Finished Level	Paragraph	Status of Endorsement
- Monophosphate, monosodium or monopotassium (monosodium or monopotassium orthophosphate)			
- Diphosphate, tetrasodium or tetrapotassium (Na or K pyrophosphate)	10 g/kg (expressed as P205) singly or in combination ¹	67	E
- Triphosphate, pentasodium pentapotassium or calcium (Na, K or Ca tripolyphosphate)			
- Polyphosphate, sodium (Na hexametaphosphate)			

¹ Includes phosphates naturally present in the finished product.

III. PROCESSED FRUITS AND VEGETABLES
CODEX STANDARD FOR TABLE OLIVES 66-1981, REV. 1, 1987

Food Additive	Maximum Level in the Finished Level	Paragraph	Status of Endorsement
Ferrous Lactate	0.15 g/kg (calculated as total iron in the fruit)	68	E

ALINORM 91/12
APPENDIX III
PART A

CLASS NAMES AND INTERNATIONAL NUMBERING SYSTEM

Foreword

Background

The International Numbering System for Food Additives (INS) has been prepared by the Codex Committee on Food Additives and Contaminants (CCFAC) for the purpose of providing an agreed international numerical system for identifying food additives in ingredient lists as an alternative to the declaration of the specific name which is often lengthy and of a complex chemical nature. It has been based on the restricted system already introduced successfully within the EEC.

The need for the identification of food additives on labels arises from the provisions of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1 - 1985). This contains the following specific provision relating to the declaration and identification of food additives in the list of ingredients

"4.2.2.3. For food additives falling in the respective classes and appearing in lists of food additives permitted for use in foods generally, the following class titles should be used to gether with the specific name or recognized numerical identification as required by national legislation."

As required by the Codex General Standard for Labelling, the identification numbers are for use only in conjunction with functional class titles which are meaningful to consumers as descriptions of the actual functions of food additives. As an example, tartrazine when used as a colour in food could be declared as either "colour (tartrazine)" or "colour 102". The advantages of the system are perhaps more apparent in the following example - "thickener (sodium carboxymethyl cellulose)" or "thickener 466".

The 18th Session (July 1989) of the Commission adopted the INS as a Codex Advisory Text on the basis that the list would be an open one that proposals for inclusion of further additives would be considered (ALINORM 89/40, para 297).

Composition of the INS

The INS is intended as an identification system for food additives approved for use in one or more member countries. It does not imply approval by Codex but is a means of identifying food additives used worldwide and extends well beyond those additives currently cleared by the Joint FAO/WHO Expert Committee on Food Additives (JECFA).

The INS does not include flavours since the Codex General Standard for Labelling does not require these to be specifically identified in the list of ingredients. Further, it does not include chewing gum bases, and dietetic and nutritive additives.

Enzymes which function as food additives are included in the INS along with the technological functions they perform. It was not possible to insert these enzymes in the INS in close proximity to other food additives with similar functions (e.g. flour treatment agents). The enzymes have therefore been included together in an 1100 series.

Explanatory notes on the layout of the INS

The INS in numerical order (Section 3) is set out in three columns giving the identification number, the name of the food additive and the technological functions. The identification number for labelling purposes usually consists of three or four digits such as 100 for Curcumins and 1001 for Choline salts and esters. However, in some instances the number is followed by an alphabetical subscript, for example as 150a which identifies Caramel I-plain. 150b identifies Caramel II - caustic sulphite process and so on. Therefore, the numbers, including the alphabetical subscripts where given, in the left column of the list are for use on labels.

Under the column covering the name of the food additive some additives are further subdivided in numerical subscript, such as (i), (ii) , etc. For example, Curcumins are subdivided into (i) Curcumin and (ii) Turmeric. These identifications are not for labelling purposes but simply to identify subclasses (in this case of Curcumins) which are covered by separate specifications.

The technological functions performed by the food additive are included in the INS as a third column as examples of technological uses of the additive. The list is indicative rather than exhaustive. These technological functions are not intended for labelling purposes. For labelling purposes the technological functions are grouped in Section 2 under more descriptive functional class titles, and simple definitions which are intended to be meaningful to consumers, are also included.

A single food additive can often be used for a range of technological functions in a food and it remains the responsibility of the manufacturer to declare the most appropriate descriptive functional class in the list of ingredients. For example, sulphur dioxide may function as either a preservative or an antioxidant in foods and may therefore be declared in the list of ingredients as "preservative 220" or "antioxidant 220", as appropriate.

In preparing the INS in numerical order an effort has been made to group food additives with similar functions together in line with the previous procedure used with EEC numbers. However, because of the extension of the list and its open nature most spaces for three digit numbers have already been allocated. Consequently, the positioning of a food additive in the list can no longer be taken as an indication of the function, although this will often be the case.

It should be noted that a few of the numbers previously allocated within the EEC have been changed to facilitate grouping of similar additives in a more effective layout. This applies to the diphosphates and polyphosphates which have now been grouped under numbers 450 to 452 and to the mineral hydrocarbons now grouped under number 905. Further changes of this nature would be made only under exceptional and justified circumstances in order to avoid difficulties for industry and confusion for consumers.

The open nature of the list

Because of its primary purpose of identification, the INS is an open list subject to the inclusion of additional additives or removal of existing on an ongoing basis. Similarly, the CCFAC will maintain an ongoing review, in conjunction with the Codex Committee on Food Labelling, of the functional class titles specified for use in food labelling.

In line with the above purpose of the INS, member governments and international organizations are invited to make proposals to the CCFAC on an ongoing basis regarding

- Additional food additives for which an international identification number could be justified
- additional functional class titles for use in food labelling in conjunction with the INS
- deletions of food additives or class titles

Proposals should be directed in the first instance to the Chief, Joint FAO/WHO Food Standards Programme, FAO, 00100, Rome, Italy.

ALINORM 91/12
 APPENDIX III
 PART B

Allocation of number for food additives proposed for inclusion in the INS

The following table details the new numbers allocated to the additives as proposed by the countries listed.

<u>NUMBER</u>	<u>FOOD ADDITIVE</u>	<u>PROPOSED BY</u>
368	Ammonium fumarate	Australia
349	Ammonium malate	Australia
409	Arabinogalactan	USA, Canada, Australia
408	Bakers yeast glycan	USA, Canada
924a	Potassium bromate	
924b	Calcium bromate	USA
383	Calcium glycerophosphate	Canada
450	Calcium hypophosphite	Canada
419	Calcium lactobionate	USA
930	Calcium peroxide	USA, Canada
927a	Azodicarbonamide	
927b	Carbamide (urea)	Norway, Sweden, USA, Australia
488	Ethoxylated mono and diglycerides	USA
241	Gum guaicum	Canada
911	Methylesters of fatty acids	USA
489	Methyl glucoside –coconut oil ester	USA
900a	Polydimethylsiloxane	
900b	Methylphenylpolys iloxane	Australia
411	Oat gum	USA, Canada
429	Peptones	USA
1521	Polyethylene glycol	Canada, Australia
446	Succistearine	USA
441	Superglycerinated hydrogenated - rapeseed oil	USA
481 (i)	Sodium stearyl lactylate	
481 (ii)	Sodium oleyl lactylate	Australia
482 (i)	Calcium stearyl lactylate	
482 (ii)	Calcium oleyl lactylate	Australia
1411	Distarch glycerol	Thailand
1423	Acetylated distarch glycerol	Thailand
1443	Hydroxypropyl distarch glycerol	Thailand
391	Phytic acid	Thailand
945	Chloropenta fluoroethane	
946	Octafluorocyclobutane	

Deletions from the INS

930	Monoisopropyl citrate
445 i	Glyceryl abietate
445 ii	Ester gum
907	Refined wax

Corrections to the INS

384	Isopropyl citrates
445	Glycerol ester of wood rosin
315	Isoascorbic acid (Erythorbic acid)
1100	Amylases
1103	Invertases
1104	Lipases
905	Mineral hydrocarbons: 905a Mineral oil, food grade 905b Petrolatum (petroleum jelly) 905c Petroleum wax
943a	Butane
943b	Isobutane

Consideration of the proposed definitions

1. Acidity regulators

Acidity regulators are substances which alter or control the acidity or alkalinity of a food.

2. Anticaking agents

Anticaking agents are substances which reduce the tendency of individual particles of a food to adhere to one another.

3. Antifoaming agents

Antifoaming agents are substances which prevent or reduce foaming.

4. Antioxidants

Antioxidants are substances which prolong the shelf-life of foods by protecting against deterioration caused by oxidation, such as fat rancidity and colour changes.

5. Bulking agents

Bulking agents are substances other than air and water which contribute to the bulk of a food without contributing significantly to its available energy value.

6. Colours

Colours are substances which add, or restore, colour in a food.

7. Colour retention agents

Colour retention agents are substances which stabilize, retain or intensify the colour of a food.

8. Emulsifiers

Emulsifiers are substances which make it possible to form or maintain a uniform mixture of two or more immiscible phases such as oil and water in a food.

9. Emulsifying salts

Emulsifying salts are substances which rearrange cheese proteins in the manufacture of processed cheese, in order to prevent fat separation.

10. Firming agents

Firming agents are substances which make or keep tissues of fruit or vegetable firm or crisp, or interact with gelling agents to produce or strengthen a gel.

11. Flavour enhancers

Flavour enhancers are substances which enhance the existing taste and/or odour of a food.

12. Flour treatment agents

Flour treatment agents are substances which are added to flour to improve its baking quality or colour.

13. Foaming agents

Foaming agents are substances which make it possible to form or maintain a uniform dispersion of a gaseous phase in a liquid or solid food.

14. Acids

Acids are substances which increase the acidity and/or impart a sour taste to a food.

15. Gelling agents

Gelling agents are substances which give a food texture through formation of gel.

16. Glazing agents

Glazing agents are substance which, when applied to the external surface of a food, impart a shiny appearance or provide a protective coating.

17. Humectants

Humectants are substances which prevent foods from drying out by counteracting the effect of an atmosphere having a low degree of humidity.

18. Preservatives

Preservatives are substances which prolong the shelf-life of foods by protecting against deterioration caused by microorganisms.

19. Propellants

Propellants are gases other than air which expel a food from a container.

20. Raising agents

Raising agents are substances or combinations of substances which liberate gas and thereby increase the volume of a dough.

21. Stabilizers

Stabilizers are substances which make it possible to maintain a uniform dispersion of two or more immiscible substances in a food.

22. Sweeteners

Sweeteners are non-sugar substances which impart a sweet taste to a food.

23. Thickeners

Thickeners are substances which increase the viscosity of a food.

Arrangement of the INS.

It was agreed that the functional classes, definitions and technological functions all be included in the one Table in the following format:

<u>Functional classes</u> (for labelling purposes)	<u>Definitions</u>	<u>Sub-classes</u> (technological functions)
1. Acidity regulator	A substance which alters or controls the acidity or alkalinity of a food	Acid, alkali, base, buffer, buffering agent, p H adjusting agent
2. Anticaking agent	A substance which reduces the tendency of individual particles of a food to adhere to one another	Anticaking agent, antistick agent, drying agent, dusting powder, release agent

The final format of the INS

Section 1 - Foreword

Section 2 - Table of Functional Classes, Definitions and Technological Functions

Section 3 - International Numbering System for Food Additives in Numerical Order

Section 4 - International Numbering System (additives in alphabetical order)

ALINORM 91/12
APPENDIX IV

UPDATING CODEX LIST B
(ALINORM87/12 – APPENDIX V and ALINORM 89/12A - APPENDIX VII)

Deletions from Codex List B

	Status	JECFA Ref. ¹
<u>Flavouring agents</u>		
Quinine hydrochloride (Temporary acceptance)	B 2	15
<u>Miscellaneous</u>		
Sodium thiocyanate (Lactoperoxidase/thiocyanate hydrogen peroxyde milk preservation system-acceptable)	B 1	15
<u>Extraction solvents</u>		
Dichlorofluormethane	B 1	
1. 2 -dichloro tetrafluoroethane	B 1	5
1. 1, 2 - trichlorotrifluoroethane	B 1	5
<u>Additions to List B</u>		
<u>Flavouring agents</u>		
Cinnamaldehyde (no ADI allocated)	B 1	15
Dihydrocoumarin (no ADI allocated)	B 1	15
<u>Food Colours</u>		
Turmeric oleoresin (no ADI allocated)	B 1	15

¹ JECFA-References
JECFA-Reference 5, Evaluation of Certain Food Additives. 23rd Report of the Joint FAO/WHO Expert Committee on Food Additives, WHO Technical Report Series no. 648, 1980 JECFA Reference 15, Summary and Conclusions of the 35th meeting of the Joint FAO/WHO Expert Committee on Food Additives, Rome, May 29 - June 7, 1989.

**SPECIFICATIONS FOR IDENTITY AND PURITY OF
CERTAIN FOOD ADDITIVES (FAO FNP 38)**

Category I (recommended for adoption to the Commission)

Chlorophylls
L-Glutamic Acid
Salts of Fatty Acids

Category II (recommended for adoption after editorial changes, including technical revisions in the Tests for arsenic, heavy metals and lead)

Beet Red
 β -Carotene, Synthetic
Bone Phosphate
Butylated Hydroxyanisole
Calcium di-L-Glutamate
Canthaxanthin
Caramel Colours
Carbon, Activated
Carthamus Yellow
Chlorophyllins, Copper Complexes
Chlorophylls, Copper Complexes, Na and K salts
Citranaxanthin
Insoluble Polyvinylpyrrolidone
Isomalt
Karaya Gum
Maltitol
Mannitol
Magnesium d-L-Glutamate
Monosodium L-Glutamate
Monoammonium L-Glutamate
Monopotassium L-Glutamate
Paprika Oleoresin
Patent Blue v
Potassium Bromate
Potassium Citrate
Potassium Iodate
Riboflavin
Riboflavin 5'-Phosphate Sodium
Sachharin
Sorbitan Monooleate
Sorbitol
Sorbitol Syrup
Xylitol

Category III (substantive changes required)

Maltitol Syrup
Polyethylene Glycols

Category IV (Substances on Agenda for 37th JECFA)

Carbon Black
d-Carvone
l-Carvone
Erythrosine
Glycerol Esters of Wood Rosin
Mineral Oil
Mixed Carotenoids
Trans-Anethole
Trichlorogalactosucrose
Xanthan Gum

Category V (Specifications designated by JECFA are incomplete)

Alpha-Amylase from *Aspergillus Oryzae*
Alpha-Amylase and Glucoamylase from *Aspergillus Oryzae*
Amyloglucosidase from *Aspergillus Niger*
Betaglucanase from *Aspergillus Niger*
Betaglucanase from *Trichoderma Hanzianum*
Carotene (algae)
Carotene (vegetable)
Cellulase from *Penicillium funiculosum*
Cellulase from *Trichoderma reesei*
Hemicellulase from *Aspergillus Niger*
Lactitol
Modified Starches
Paraffin Wax
Pectinase from *Aspergillus Niger*
Petroleum Jelly
Protease from *Aspergillus Oryzae*
Smoke flavourings
Tagetes Extract
Tannic Acid

MAXIMUM PROPOSED LEVELS FOR AFLATOXINS IN CERTAIN FOODS
MOVING IN INTERNATIONAL TRADE

Foods for human Consumption (excluding milk and dairy products)

Maximum Level: 10 µg/kg total aflatoxin in a sample size of not less than [3 kg]

Max. Size of Lot: 25000 kg

Animal Feeding Stuffs Supplementary Feeding stuffs for Milk Producing Animals

Guideline Level: [10 µg/kg Aflatoxin B,]

METHODS OF ANALYSIS FOR AFLATOXINS

Type II Methods

(All reference are to be Official Methods of Analysis of the AOAC, 15th Ed., 1990)

Aflatoxins in Corn (1972)	(TLC)	972.26, p 1191
Aflatoxins in Cottonseed Products (1980)	(TLC)	980.20, p 1192
Aflatoxins in Coconut, Copra and Copra Meal (1971)	(TLC)	971.24, p 1191
Aflatoxins in Pistachio Nuts (1974)	(TLC)	974.16, p 1195
Aflatoxins in Peanuts and Peanuts Products (1970)	(TLC)	970.45, p 1190
Aflatoxins in Soybeans (1972)	(TLC)	972.27, p 1195
Aflatoxins B1, B2, G1 and G2 in Corn and Peanut Butter AOAC-IUPAC	(TLC)	990.33, suppl.

Type III Method:

High Performance Liquid Chromatography

- Tarter, E.J. Hanchay, J.P. Scott, Peter M (1984): Improved Liquid Chromatographic Method for Determination of Aflatoxins in Peanut Butter and Other Commodities. JAOAC, 67(3), 597-600

ALINORM 91/12
APPENDIX VII

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

Food Additives

Proposed by:

Glazing Agents

- Bees Wax
- Benzoin Gum
- Candelilla Wax
- Hydrocarbon Wax
- Carnauba Wax
- Shellac

Federal Republic of
Germany

Ortho – Phenylphenol

Carrageenans (immunological aspects)

Alginates

U.K. and France

Lysozyme

Italy and Australia

Konjac flour

U.S.A.

Potassium Bromate

New Zealand

Nitrogen (Specifications only)

Pectins (Specifications only)

Sorbitan tristearate (Specifications only)

Thermally oxidized Soyabean oil

Thermally oxidized Soyabean oil interacted with monoand
diglycerides of food fatty acids

Denmark

Cyclodextrin

Democratic Peoples'
Republic of Korea

Calcium Disodium EDTA

CCASIA

Contaminants :

Proposed by:

Nitrite

Nitrate

Nitrosamines

The Netherlands

Solanine

Finland

Cyanogenic glycosides

Secretariat

1, 3-Dichloro-2-Propanol

3-Chloro-1, 2-propandiol

Federal Republic of
Germany

Dioxins

CCFAC

Others

Proposed by:

Safety assessment of ammoniation process to reduce
aflatoxin levels in food and feed

Secretariat

Proposed Draft

GUIDELINE LEVELS FOR CERTAIN CONTAMINANTS

(Advanced to Step 8 of the Procedure)

Methylmercury	Proposed guideline level
All fish except predatory fish	0.5 mg/kg
Predatory fish (such as shark, swordfish, tuna, pike and others)	1 mg/kg

Note:

The proposed Guideline levels are intended for methyl mercury in fresh or processed fish and fish products moving in international trade. Lots should be considered as being in compliance with the proposed guideline levels if the level of methyl mercury in the analytical sample, derived from the composite bulk sample, does not exceed the above proposed levels. Where these proposed Guideline levels are exceeded, governments should decide whether and under what circumstances, the food should be distributed within their territory of jurisdiction and what recommendations, if any, should be given as regards restrictions on consumption, especially by vulnerable groups such as pregnant women.

Vinyl chloride monomer

Proposed Guideline level in food	0.01 mg/kg
Proposed Guideline level in food packaging material	1.0 mg/kg

Acrylonitrile

Proposed Guideline level in food	0.02 mg/kg
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