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REPORT OF THE FOURTH SESSION  
OF THE  
CODEX COMMITTEE ON PESTICIDE RESIDUES

Arnhem, 6-14  
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REPORT OF THE FOURTH SESSION OF THE  
CODEX COMMITTEE ON PESTICIDE RESIDUES

INTRODUCTION

1. The Codex Committee on Pesticide Residues held its fourth session in Arnhem, the Netherlands, from 6 to 14 October 1969. The session was opened by the Secretary of State for Social Affairs and Public Health, Dr. R.J.H. Kruisinga, who welcomed the delegations on behalf of the Government of the Netherlands. Dr. Kruisinga drew attention to the desirability of a move towards the use of less persistent and more selective pesticides. Dr. Kruisinga stated that this trend in pesticide policy was now increasing in the developed countries. In the developing countries, where priority has to be given to the control of vectors of disease and crop losses, this would not be feasible in all cases. In the development programme of such countries, arrangements should be made for research into the use of new pesticides and methods. Dr. Kruisinga referred to the difficulties facing the Committee in endeavouring to bring the various diverging interests of developing versus developed and importing versus exporting countries into harmony. Dr. Kruisinga concluded that these diverging, but often parallel points of view, would form an important background to all discussions at this session of the Committee.

2. Drs. A. Kruysse, Inspector General of Public Health in charge of Foodstuffs Division, the Netherlands, acted as Chairman.

3. The session was attended by government delegates, experts, observers and advisers from the following 25 countries: Argentina, Australia, Belgium, Brazil, Canada, Denmark, Finland, France, the Federal Republic of Germany, Ghana, Hungary, Ireland, Israël, Japan, the Netherlands, New Zealand, Norway, Poland, Portugal, Sweden, Switzerland, Thailand, United Kingdom, United States of America and Upper Volta, and observers from Czechoslovakia and South Africa. The following international organizations were also represented: Council of Europe, European Economic Community (EEC), International Federation of National Association of Pesticide Manufacturers (GIFAP), International Organization for Standardization (ISO/TC 34 and SC 5). A list of participants, including officers from FAO and WHO, is set out as Appendix I to this Report.

ADOPTION OF THE AGENDA

4. The Committee agreed to discuss agenda item 7 dealing with the Report of the Ad Hoc Drafting Group in Ottawa (CCPR/69/4), before agenda item 4. It also agreed to discuss agenda items 10 and 11.1 after agenda item 6. The Committee adopted the provisional agenda with the above amendments.

APPOINTMENT OF RAPORTEURS

5. Dr. K.C. Walker from the delegation of the U.S.A. and Miss Vivian Wightman from the delegation of Canada agreed to act as

Rapporteurs and were so appointed by the Chairman. Dr. E.E. Turtle of the delegation of the United Kingdom agreed to assist as in the past.

## PART I

### REPORT OF THE AD HOC DRAFTING GROUP ON PRINCIPLES FOR ESTABLISHING AND ENFORCING PESTICIDE RESIDUE TOLERANCES

6. The Committee discussed the report of the above Ad Hoc Drafting Group which met in Ottawa, June 9-13, 1969, contained in working document CCPR/69/4 (see Appendix II) and came to the following conclusions:

#### Interpretation of international tolerances

7. After discussing paragraph 4 of the report, the Committee accepted the view of the Ad Hoc Drafting Group that the decision recorded in paragraph 85 of the Report of the Sixth Session of the Codex Alimentarius Commission implied that in accepting an international tolerance, countries would have to permit the use of pesticides for domestic production whether or not such pesticides were needed in those countries.

8. The Committee agreed that this could be contrary to good agricultural practice and the proper use of pesticides in those countries. It was therefore decided to request the Commission to clarify the meaning of paragraph 85 of the Report of its Sixth Session by indicating whether it was intended that governments accepting Codex tolerances would be obliged to permit the use of pesticides not needed and therefore not approved in their countries for the use in question. In the Committee's opinion, the practice of not authorizing pesticides in individual countries for a given use, but at the same time accepting an international tolerance for the food concerned, was not in conflict with the General Principles of the Codex Alimentarius.

9. It was also noted that difficulties arose where a pesticide was used both nationally and internationally on the same crop and the corresponding national tolerance was different from the proposed international tolerance. The Committee was of the opinion that it would not be practical and possibly contrary to the interests of fair trade to have two legal tolerances, one applying to imports and the other to crops produced domestically. It was therefore agreed that, in conformity with the General Principles of the Codex Alimentarius, paragraph 5.A., only one tolerance, namely the international tolerance, would be acceptable.

#### The principles to be used to establish international tolerances

10. The Committee considered the procedures for estimating tolerances, employed by the Joint Meeting on Pesticide Residues, a résumé of which is given in paragraphs 6(a)-6(d) of the Report of the Ad Hoc Group. The representative of FAO drew the Committee's attention to

the lack of agricultural and other relevant data from countries in tropical regions and indicated that for this reason a number of the recommended tolerances did not take fully into account the requirements of these countries for international tolerances. In this respect the Committee also noted paragraph 187 of the Report of the Sixth Session of the Codex Alimentarius Commission which indicated that developing countries were not able to comment constructively as to the practicability or desirability of proposed pesticide tolerances in the absence of residues data from sources in their own countries.

11. The Committee agreed that the use of the ADI figures to evaluate the safety of residues should only be carried out by appropriately qualified and experienced scientists taking fully into consideration all information contained in the reports and monographs of the Joint Meeting.

12. It was further pointed out that where the data on the disappearance during processing (paragraph 6(c)) or the amount and nature of residues in food as consumed (paragraph 7) are deemed to be inadequate, temporary tolerances should be recommended. In order to clarify the meaning of the word "temporary" in relation to a tolerance, the Committee adopted the definition elaborated by the Joint Meeting (see Appendix III).

13. It was also noted that the expression "terminal residue" might be taken to mean the quantity of pesticide residue in food as consumed or the chemical nature of the residues in food following degradation of the parent pesticide. The Committee agreed to request the Joint Meeting to clarify the meaning of "terminal residue".

14. The Committee, when discussing paragraph 7 and 10 of the Report of the Ad Hoc Drafting Group, considered that it was unnecessary formally to allocate distinct portions of the ADI to residues from different uses. The Committee recognized that it would be very difficult to evaluate intake from sources other than foods. However, studies made in a small number of countries with temperate climates indicate that, for the average consumer, food is the main source of the pesticide intake except in special situations. The Committee therefore recommended that the Joint Meeting, where necessary, should consider other sources of exposure when they evaluate the safety of residues in the establishment of tolerances. Furthermore, the Committee recommended that the development of further data concerning levels of pesticides in sources other than food should be encouraged.

Good agricultural practice and its relationship to international tolerances

15. The Committee was in agreement with the opinion of the Ad Hoc Drafting Group regarding the definition of "good agricultural practice" (see paragraph 8 of the Report of the Drafting Group) and requested the Joint Meeting to reconsider its definition of "good agricultural

practice" in the light of those considerations so that it should be based on the uses recommended by the government authorities in each country from which information is available. These agricultural practices should take into account the quantities and pesticides needed to adequately control the pests concerned so as to leave a minimum of residue and should also be considered acceptable to the Joint Meeting. International tolerance levels should accommodate such residues providing they are considered to be safe and technologically justified.

16. The Committee discussed the question raised in paragraph 8 of the Report of the Ad Hoc Drafting Group concerning the establishment of "codes of practice for the use patterns of pesticides". In this connection the Committee agreed that specific recommendations regarding details of pesticide application would not be possible on an international basis, since the mode of application of pesticides was greatly influenced by a number of factors which differ from region to region. It was pointed out that FAO and WHO had already done work in this field and that, for example, a document entitled: "Guidelines for Legislation concerning the Registration for Sale and Marketing of Pesticides" (PL: CP/21; OH/69.3) had been published jointly by FAO and WHO.

17. It was recognized that, according to the Rules of the Commission, the Committee was at liberty to draw up statements which would assist in achieving the purposes of the Codex Alimentarius but that, in considering taking on new work, the criteria laid down by the Commission (see page 45 of the Procedural Manual, Second Edition) should be considered. In view of the agreement indicated in paragraph 15 and the desire of the Committee to provide general guidelines, the delegation of the Netherlands agreed to prepare a working paper, in consultation with FAO and WHO, for the next session of the Committee concerning guidelines for the use of pesticides. It was agreed that in the light of such a working document it would be possible to decide the nature and status of the document to be elaborated.

#### Comparison of tolerance and actual residue levels in diets

18. The Committee took note of paragraph 9 of the Report of the Ad Hoc Drafting Group and the working paper prepared by the delegation of the U.S.A. (see Appendix III to CCPR/69/4, the Report of the Ad Hoc Group) illustrating the difficulties in estimating the intake of pesticide residues in the absence of results of total diet studies. It was pointed out that results of such total diet studies as have been made indicate that pesticide residue intakes were usually far below the acceptable daily intakes. The WHO Secretariat informed the Committee that a pilot computerized programme had been initiated for the calculation of the potential intake of pesticide residues in individual countries, using the average food consumption figures and the appropriate residue levels.

### Point of enforcement of tolerances

19. The Committee agreed with the phrasing used by the sixth session of the Commission in connection with the pesticide residue tolerances adopted at Step 8 of the Procedure, namely that the tolerances shall apply "at the point of entry into a country or at the point of entry into trade channels within a country." The Committee interpreted the statement "... and these tolerances shall not be exceeded thereafter" to mean that a country accepting an international tolerance shall not permit levels in excess of the established international level. The question arose in this connection whether countries accepting the tolerances would be in a position to permit further treatment of the food with the pesticides in question. It was pointed out that such further treatment involved mainly fumigants and that arrangements could be made, if necessary, after fumigation to allow for adequate waiting time to enable residue levels to fall below the tolerances set for the fumigant.

### Certification

20. The Committee discussed paragraph 12 of the Ad Hoc Drafting Group report concerning the issuing of a certificate of guarantee by the exporting country to the effect that the product was in conformity with the limits laid down for pesticide residues of the importing country. It was agreed that the case of pesticide residues was quite different from that of Codex Commodity Standards and that it would not be appropriate to require certification. Some Delegations pointed out that it would be advantageous if information concerning the treatment history, especially in respect of fumigation, were made available to the receiving country. The Committee agreed that, while this might be desirable, it would not be practical to insist that this information should be supplied, and did not so recommend.

### Sampling, and enforcement action following sampling and analysis

#### Discussion by the Committee

21. In discussing paragraphs 13 and 14 of the Report of the Ad Hoc Drafting Group, the Committee agreed that there were two distinct problems, namely:

- (a) sampling and analysis to determine whether or not a single identifiable lot complied with a particular tolerance;
- (b) enforcement action following sampling and analysis.

22. With regard to the problem of sampling mentioned in para. 21(a) above, the Committee agreed that this was a matter of great urgency so that Codex tolerances could be rendered more meaningful. The representatives of FAO and WHO stated that it may be possible for them to assist in providing advice on methods of sampling because these problems were of great importance to all Member Governments of FAO and WHO and were not restricted to the Member Governments of the Codex Alimentarius Commission. The Committee strongly urged FAO and WHO to investigate the possibility of providing expert guidance on

this important problem in the near future. In this connection it was pointed out that the Codex Committee on Methods of Analysis and Sampling was in the process of drawing up a sampling plan to cover quality and was also considering the establishment of similar sampling plans to cover factors relating to health. It was agreed that such sampling plans should be taken into consideration when considering the problem of sampling foods for pesticide residues. The Representative of ISO pointed out that the Committee ISO/TC 34 and ISO/TC 69 were currently engaged in work on statistical sampling methods for the purposes mentioned above.

23. As regards the problem stated in paragraph 21(b), the Committee decided to set up a Working Group to meet during the present session to discuss this problem. The following delegations were designated to participate: Canada, Federal Republic of Germany, Israël, Netherlands, United Kingdom, and the U.S.A. The Secretary of the Committee and a representative from FAO were also present.

#### Report of the Working Group

24. Recognizing that the problems mentioned under paragraph 21 are inter-dependent, the Working Group suggested that they be considered together. Accordingly the Group recommended that a group of countries be designated by the Committee to review the problem in depth in consultation with qualified specialists of FAO, WHO and ISO, and to prepare a working paper for consideration at the fifth session of the Committee. The terms of reference of the study group of countries are as follows:

- (a) to examine the administrative procedures used for enforcement action in countries, including the examination of the sampling procedures, and of representative data obtained therefrom, as indicated in paragraphs 13 and 14 of the Report of the Ottawa meeting;
- (b) to suggest means by which differences between tolerances and procedures might be aligned.

The appropriate portions of paragraphs 13 and 14 of the Report of the Ad Hoc Drafting Group are as follows:

#### Paragraph 13

".... Realizing that the problem of sampling in this special area of pesticide residues in foods has not been dealt with previously in any of the Codex Alimentarius work, the Group recommended that a special study of this problem should be undertaken by experts in statistical sampling, in the practical application of pesticides, in toxicology (to indicate what deviations from a mean could safely be accepted) and in the analysis of foods for pesticide residues (to examine the sampling procedure and relate it to the accuracy of the method of analysis to be used)."

Paragraph 14

"In the opinion of the Group the differences between the amounts of residues actually permitted by different countries may not be as great as might (at first) appear from an examination of their declared tolerance figures. In some countries the tolerance is a level of residue above which a regulatory action of some kind is usually taken. In other countries a greater degree of administrative discretion may apply."

25. It is proposed to issue to members of the Codex Committee on Pesticide Residues a questionnaire pertaining to the procedures presently followed in Member Countries. The questionnaire will be related particularly to administration of tolerances on food commodities in international trade and with special emphasis on those cases where there are differences between Codex and existing national tolerance figures. Subject to agreement by FAO and WHO the results of this questionnaire will be examined by qualified FAO/WHO consultants with special knowledge of the procedures and statistics of sampling. The consultants will prepare a preliminary working paper for consideration by representatives of the designated group of countries for use in preparing their report to this Committee.

Discussion of the Report of the Working Group by the Committee

26. The Committee discussed the conclusions reached by the Working Group set up during the present session (see paragraphs 23 to 25 above) and agreed with the proposals contained in paragraph 24 above, that an Ad Hoc Working Group be convened between the present and the next sessions of the Codex Committee on Pesticide Residues. After discussing the status of the Ad Hoc Working Group, the Committee agreed that it should be set up in conformity with sentence No. 1 of paragraph 8 of the Guidelines for Codex Committees. The following countries were suggested and expressed an interest in participating in the Ad Hoc Group session, subject to confirmation by their governments: Australia, Canada, Denmark, the Federal Republic of Germany, France, Israël, the Netherlands, United Kingdom and the U.S.A. It was agreed that any decision to call a meeting of the Group should be conditional on working papers being available to the Ad Hoc Working Group in sufficient time so that a final paper could be drafted by the Ad Hoc Group before the next session of the Codex Committee on Pesticide Residues.

Note by the Secretariat:

The FAO Representative informed the Committee that the approval of the Codex Alimentarius Commission would be necessary for the formation of a Sub-Committee. Even though it was obviously not the intention of the Committee to contemplate other than the creation of a very informal drafting group to expedite and facilitate the work of the Committee, it has been subsequently confirmed that the proposed 'ad hoc Group session' would in fact constitute an unscheduled meeting of a Codex Sub-Committee from the point of view of the FAO Conference and therefore, in accordance with the Guidelines for Codex Committees and the Rules of Procedure of the Codex Alimentarius Commission, would require the approval of the Commission at its Seventh Session in April 1970.

27. The delegate of Israël indicated that he was willing to explore the possibility that the Government of Israël would accept full responsibility for holding such a meeting, which would prepare a report for the next session of this Committee. It was also noted that, if for any reason the Government of Israël would not be in a position to convene such a meeting, the delegation of Denmark had indicated that their Government might consider taking this responsibility upon itself.

#### Methods of analysis

28. During the discussion of paragraph 15 of the Report of the Ad Hoc Drafting Group, the Secretariat drew the Committee's attention to the fact that Codex methods of analysis were international referee methods to be used in cases of dispute. This being so, the existence of several referee methods for the same pesticide would create difficulties unless these methods had been proved to be equivalent and so accepted by governments.

29. The delegation of the Federal Republic of Germany maintained that a single international method of analysis should be agreed upon, especially for the so-called "zero tolerances" which provide for an absence of a pesticide residue at the limit of detectability. The Committee was in general agreement with the views expressed by the Ad Hoc Drafting Group concerning Codex referee methods for pesticide residues and the Procedure to be adopted in arriving at appropriate recommendations for methods of analysis.

#### Zero tolerances

30. It was recognized that there were two situations where "nil residue" or "zero residue" provisions might apply:

- (a) where a food, following an approved application of a pesticide, was to be free from residues;
- (b) to guard against the presence in a particular food of residues from a pesticide not approved for use on that food.

31. It was agreed that in the latter case it would be appropriate to establish a practical residue limit. It was pointed out that the concept of "zero tolerance" should be defined in terms of the limit of detectability using an appropriate method of analysis. The Secretariat drew the Committee's attention to the General Principles for the Establishment of Codex Methods of Analysis (see Procedural Manual of the Codex Alimentarius Commission, Second Edition, 1969) according to which, methods of analysis related to certain provisions were to be international Codex methods.

32. The Committee agreed that the concept of "zero tolerance", without specifying a particular method of analysis, was a scientifically unsound concept in relation to enforcement and that instead finite tolerances should be established specifying appropriate methods of

analysis. In this respect, and with regard to paragraph 31 above, the representative of ISO pointed out that methods of analysis of adequate precision should be established for all pesticide residue tolerances, whatever the magnitude of such tolerances might be.

33. The Committee agreed to request government comments on the decisions recorded in paragraphs 6 to 32 of the present report. The delegation of the Federal Republic of Germany agreed to prepare a working paper taking into account comments received, any decisions of the Commission in this regard and other relevant material for the next session of the Committee. The Secretariat pointed out that it would be desirable to summarize the principles relating to pesticide residues along the lines of similar General Principles drawn up by other Codex Committees.

## PART II

### TOLERANCES, TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS AT STEP 7 OF THE PROCEDURE

34. The Committee examined the tolerances, temporary tolerances and practical residue limits sent to governments for comment at Step 6 of the Procedure (see Appendix III of the Report of the Third Session, ALINORM 69/24). The Committee had before it comments from governments on these tolerances in working papers CCPR/69/2/1 and CCPR/69/2/2 and additional government comments which had been received after the closing date for the receipt of comments. During the discussion the following comments and decisions were made:

#### ALDRIN AND DIELDRIN

(The limits apply to aldrin and dieldrin singly or in combination and are expressed as dieldrin.)

#### Aldrin and dieldrin in vegetables

35. The Committee considered the temporary tolerance of 0.1 ppm in vegetables. The delegation of France could not agree with the establishment of this figure as an international tolerance for leafy vegetables. The delegations of the Federal Republic of Germany and Denmark could accept only a practical residue limit for this item for a limited period of time. The delegation of Norway could accept these tolerances for international trade but stated that the use of aldrin and dieldrin would not be authorized in that country.

36. As it was not clear which vegetables were included in this class, the Committee decided to hold the temporary tolerance at Step 7 and to refer this item back to the Joint Meeting for clarification (see Appendix V).

Aldrin and dieldrin in whole milk, milk products and meat

37. The Committee considered the practical residue limits of 0.005 ppm for whole milk, 0.125 ppm (on a fat basis) for milk products and 0.2 ppm (on a fat basis) for meat. It was noted that the delegation of Australia had supplied information about the need to increase these figures to 0.008 ppm, 0.2 ppm and 0.3 ppm respectively as described in their written comments.

38. The Committee decided to return these three practical residue limits to Step 6 and agreed that governments should be asked for further comments (see Appendix VI), and requested that data submitted by the Australian delegation should be considered by the Joint Meeting on Pesticide Residues.

DIPHENYL

Diphenyl in citrus fruit

39. The Committee considered the tolerance of 110 ppm in citrus fruit. The Canadian delegation repeated their suggestion that the results of collaborative studies on methods of analysis should be made available to the Joint FAO/WHO Meeting on Pesticide Residues for evaluation in order that a referee method and/or equivalent method could be recommended. The Committee took note that results of such collaborative studies were now being summarized by IUPAC for the Joint Meeting. The delegation of Canada drew the Committee's attention to the method of McCarthy's et al (1965, J.A.O.A.C. 48:915) using the thin layer chromatography and phosphorimetry. The delegation of the Netherlands stated that they would prefer a thin layer chromatographic method and indicated that this method was based on collaborative studies in the EEC.

40. The delegation of the Federal Republic of Germany wished to reserve their position concerning a number of tolerances, including that for diphenyl, since the tolerances to be included in directives being elaborated by the EEC at present might differ from those recommended by this Committee. The observer of the EEC drew the attention of the Committee to the fact that the Member Countries of the EEC were bound to implement the provisions of an EEC directive, which establishes a tolerance of 70 ppm for diphenyl. Any proposed acceptance of other tolerances by the Member Countries would require prior agreement by the EEC.

41. The Committee agreed that the tolerance of 110 ppm be submitted to the Commission at Step 8 of the Procedure (see Appendix IV).

HEPTACHLOR

(The limits apply to combined residues of heptachlor and heptachlor epoxide determined and expressed as heptachlor.)

Heptachlor and heptachlor epoxide in root vegetables, cole crops and leafy vegetables

42. The Committee considered the temporary tolerance of 0.1 ppm in root vegetables (except potatoes, carrots and sugar beets) cole crops and leafy vegetables. It was noted that in the report of the 1968

Joint Meeting, sugar beets had inadvertently not been excluded from the group of root vegetables. For this reason sugar beets were not considered further by the Committee. The Joint Meeting was requested to confirm this (see paragraph 168).

43. The Committee decided that it was not necessary to have the words '(head lettuce, spinach)' after 'leafy vegetables'. The delegations of Denmark and the Federal Republic of Germany stated that they could not accept tolerances for heptachlor and heptachlor epoxide but only a practical residue limit of 0.05 ppm. which was the level found in those countries. This would also refer to the limits mentioned in the previous paragraph. The delegation of Norway could accept these tolerances for international trade but stated that the use of heptachlor would not be authorized in that country.

44. The Committee agreed that the temporary tolerance of 0.1 ppm in root vegetables (except potatoes, carrots and sugar beets) cole crops and leafy vegetables be submitted to the Commission at Step 8 of the Procedure (see Appendix IV).

Heptachlor and heptachlor epoxide in potatoes

45. The Committee agreed to submit the practical residue limit of 0.05 ppm in potatoes to the Commission at Step 8 of the Procedure (see Appendix IV).

Heptachlor and heptachlor epoxide in meat (on a fat basis)

46. The practical residue limit of 0.2 ppm in meat (on a fat basis) proposed by the Joint Meeting at its 1967 Session was discussed (see Appendix III, page 1 of the Report of the Third Session of this Committee, ALINORM 69/24). The delegation of Denmark expressed concern over the trend to raise the levels adopted at the Third Session. The delegation of the Netherlands pointed out that they could not accept a limit of 0.2 ppm because investigations of samples of both home produced and imported meat had revealed that 0.1 would be sufficient for these products.

47. The Committee agreed to submit the practical residue limit of 0.2 ppm in meat (on a fat basis) to the Commission at Step 8 of the Procedure (see Appendix IV).

Heptachlor and heptachlor epoxide in whole milk and milk products

48. The Committee agreed to submit the practical residue limit of 0.005 ppm in whole milk and of 0.125 ppm in milk products (on a fat basis) to the Commission at Step 8 of the Procedure (see Appendix IV). The delegation of the Federal Republic of Germany reserved their position concerning the practical residue limits for these substances in meat, whole milk and milk products in view of a lack of sufficient data on the residues occurring in that country.

HYDROGEN PHOSPHIDE

Hydrogen phosphide in raw cereals

49. The Committee agreed to submit the tolerance of 0.1 ppm in raw cereals to the Commission at Step 8 of the Procedure (see Appendix IV).

LINDANE

Lindane in whole milk and milk products

50. The Committee considered the practical residue limits of 0.008 ppm in whole milk and 0.2 ppm in milk products (on a fat basis) adopted at the last session. The Committee's attention was drawn to the fact that these figures were twice as high as those recommended by the Joint Meeting. It was noted that the Joint Meeting had been unable to reevaluate these figures because they had not received data in support of the higher figures.

51. The attention of the Committee was drawn to the Report of the 1968 Session of the Committee (ALINORM 69/24, paragraph 45, first line) where "Joint Meeting" was used erroneously instead of "Codex Committee on Pesticide Residues". The Joint Meeting had recommended a practical residue limit of 0.004 ppm in whole milk and of 0.1 ppm in milk products (on a fat basis).

52. The Committee agreed to return the practical residue limit of 0.008 ppm in whole milk and of 0.2 ppm in milk products (on a fat basis) to Step 6 (see Appendix VI) and to ask governments for further comments and for data on the residues of lindane occurring in these commodities.

53. The delegation of France drew attention to the use of mixtures of isomers (technical grade BHC), which may cause difficulties in international trade. The Committee agreed that this matter should be studied.

MALATHION

(The limits apply to malathion plus its oxygen analogue.)

Malathion in fruit, dried fruit, nuts and vegetables

54. The Committee considered the tolerances of 8 ppm in fruit (except citrus fruit), 4 ppm in citrus fruit, 8 ppm in dried fruit and nuts, 3 ppm in vegetables (except leafy vegetables) and 6 ppm in leafy vegetables. The delegation of Denmark expressed their concern about the possibility of exceeding the ADI when the intake is calculated on the basis of these general tolerances for malathion. Additional data on disappearance during handling and processing, and on the occurrence of residues in prepared food were needed before a precise assessment of the intake of malathion could be made.

55. The following statements were made on the tolerances which had been recommended:

fruit (except citrus fruit)

The delegations of Belgium, France, the Federal Republic of Germany and the Netherlands were in favour of a tolerance of 0.5 ppm.

citrus fruit

The delegation of the Federal Republic of Germany stated that the tolerance of 4 ppm applied to the whole fruit, and that in the pulp not more than 0.5 ppm should be permitted.

dried fruit

The delegation of the Federal Republic of Germany considered the figure of 8 ppm too high and proposed a tolerance of 0.5 ppm. The Committee concluded that the recommended tolerance would also cover post-harvest treatments.

nuts

The delegation of the Federal Republic of Germany considered the limit of 8 ppm too high and proposed 0.5 ppm. The Committee recognized that the proposed tolerance covered post-harvest treatment and decided that clarification was needed on whether this tolerance was applicable to whole or shelled nuts.

vegetables (except leafy vegetables)

The delegation of the Federal Republic of Germany proposed a tolerance of 0.5 ppm.

leafy vegetables

The delegations of Belgium, France, the Federal Republic of Germany and the Netherlands proposed 3 ppm.

56. In view of the above wide variations regarding the levels needed for food in international trade, the Committee agreed to return all these tolerances to Step 6 (see Appendix VI) and to ask the Joint Meeting to reconsider them. In view of the uncertainty concerning the classes of foods, governments were requested to indicate what foods were included under the categories "fruit" and "vegetables" and to indicate, with supporting data, which food items require special tolerances.

INORGANIC BROMIDE

(Determined and expressed as total bromide ion from all sources.)

Inorganic bromide in fruit (except avocados, citrus fruit and strawberries)

57. The Committee agreed to retain the proposed temporary tolerance of 20 ppm in fruit as a group at Step 7 of the Procedure and to refer this matter back to the Joint Meeting on Pesticide Residues with a request for more detailed specification of "fruit" as a commodity. It was decided to deal in this session only with the individual commodities, which were listed as exceptions.

58. The delegation of the Netherlands expressed its doubt about the complete degradation of organic to inorganic bromide. It was noted that residues resulting from soil fumigation are listed for separate revision by the Joint Meeting. With regard to this application, the delegation of the United States wanted more exceptions for other commodities, especially for those cases where soil fumigation leads to an increase of inorganic bromide. Data about these other commodities should be supplied to the Joint Meeting.

Inorganic bromide in avocados, citrus fruit and strawberries

59. The Committee agreed that the temporary tolerances of 75 ppm of inorganic bromide for avocados, 30 ppm for citrus fruit and for strawberries, all determined and expressed as total bromide ion from all sources, be submitted to the Commission at Step 8 of the Procedure (see Appendix IV).

60. The delegation of the Netherlands made a reservation for strawberries since residues from soil fumigation may have to be included.

Inorganic bromide in dried fruit

61. The Committee agreed to retain the proposed temporary tolerance of 30 ppm in dried fruit (except dried dates, figs, peaches, prunes and raisins) at Step 7 of the Procedure (see Appendix V) and to refer this matter back to the Joint Meeting with a request to review this figure with a detailed specification of the commodity "dried fruit".

Inorganic bromide in dried dates, figs, peaches, prunes and raisins

62. The Committee agreed to submit the temporary tolerances of 100 ppm for dried dates, 250 ppm for dried figs, 50 ppm for dried peaches, 20 ppm for dried prunes and 100 ppm for dried raisins (including sultanas and dried currants) to the Commission at Step 8 of the Procedure (see Appendix IV).

63. The delegation of the Federal Republic of Germany could not accept a tolerance on dried dates and figs higher than 50 ppm. The delegation of the Netherlands considered a tolerance of 10 or 20 ppm as a maximum on raisins. They also reserved their position on the tolerance for dried dates and dried figs.

Inorganic bromide in herbs and spices

64. The Committee agreed that the temporary tolerance of 400 ppm in herbs and spices be submitted to the Commission at Step 8 of the Procedure (see Appendix IV).

Inorganic bromide in dried eggs

65. Several delegations were of the opinion that the proposed temporary tolerance of 400 ppm inorganic bromide in dried eggs was too high. Some delegations expressed their doubt about the residues only being inorganic bromide in view of the very likely alkylation of components of eggs. It was strongly recommended that the Joint Meeting should study this to be sure that there is no toxic hazard involved. The delegation of the Federal Republic of Germany could not accept any tolerance for inorganic bromide in dried eggs.

66. The Committee agreed to retain the proposal for a temporary tolerance of 400 ppm inorganic bromide in dried eggs at Step 7 of the Procedure and to refer this matter back to the Joint Meeting (see Appendix V).

PIPERONYL BUTOXIDE

Piperonyl butoxide in raw cereals

67. The Committee agreed to submit a temporary tolerance of 20 ppm on raw cereals to the Codex Alimentarius Commission at Step 8 of the Procedure (see Appendix IV).

68. The delegations of Denmark, the Federal Republic of Germany and the Netherlands had reservations on this figure. The delegation of the Netherlands proposed a temporary tolerance of 10 ppm.

Piperonyl butoxide in fruit (for canning), dried fruit, dried vegetables, oil seeds and tree nuts

69. It was agreed to submit the temporary tolerance of 8 ppm for these commodities to the Commission at Step 8 of the Procedure (see Appendix IV).

PYRETHRINS

Pyrethrins in raw cereals, fruit (for canning), dried fruit, dried vegetables, oils seeds and tree nuts

70. The Committee agreed to submit the temporary tolerances of 3 ppm in raw cereals and 1 ppm in fruit (for canning), dried fruit, dried vegetables, oil seeds and tree nuts to the Commission at Step 8 (see Appendix IV).

PART III

TOLERANCES, TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS AT  
STEP 4 OF THE PROCEDURE

71. The Committee examined the tolerances, temporary tolerances and practical residue limits sent to governments for comment at Step 3 of the Procedure (see Appendix V of the Report of the Third Session of the Codex Committee on Pesticide Residues, ALINORM 69/24). The Committee had before it comments from governments on these tolerances in working papers CCPR/69/3/1, CCPR/69/3/2 and CCPR/69/3/2 Add 1. During the discussions the following comments and decisions were made:

ALDRIN AND DIELDRIN

(The limits apply to aldrin and dieldrin, singly or in any combination expressed as dieldrin).

72. In a general statement on these compounds the delegations of Denmark, the Federal Republic of Germany and Switzerland reserved their positions regarding tolerances, but not regarding practical residue limits, in view of the fact that the use of these chemicals had been prohibited in their countries.

Aldrin and dieldrin in raw cereals except rice

73. The Committee agreed to submit a practical residue limit of 0.02 ppm in raw cereals, except rice, to the Commission at Step 5 of the Procedure (see Appendix VII).

Aldrin and dieldrin in rice

74. The Committee agreed to submit a temporary tolerance of 0.05 ppm in rice to the Commission at Step 5 of the Procedure (see Appendix VII).

75. The delegation of Japan could not accept this tolerance for their country because a residue of 0.05 ppm of these compounds in rice might lead to the ADI being exceeded. The Committee was of the opinion that it would be desirable to receive more information on the use of these chemicals on rice in other countries. Governments were invited to supply data on this subject to the Committee.

Aldrin and dieldrin in fruit, except citrus fruit

76. The Committee agreed to submit a temporary tolerance of 0.1 ppm in fruit (except citrus fruit) to the Commission at Step 5 of the Procedure (see Appendix VII).

77. The delegations of the Federal Republic of Germany and the Netherlands reserved their position. The delegation of France could accept the proposed temporary tolerance only until June 1971.

Aldrin and dieldrin in citrus fruit

78. The Committee agreed to submit a temporary tolerance of 0.05 ppm in citrus fruit to the Commission at Step 5 of the Procedure (see Appendix VII).

Aldrin and dieldrin in eggs (on a shell-free basis)

79. It was agreed to submit a practical residue limit of 0.1 ppm in this commodity to the Commission at Step 5 of the Procedure (see Appendix VII).

CARBARYL

80. The Committee noted that new information on carbaryl was to be evaluated by WHO at the next session of the Joint Meeting. It was also agreed that the Joint Meeting should be asked to study the data relating to the tolerances referred to in paragraphs 78-87 (rice, fruit, vegetables, leafy vegetables, brassica, cucurbits, olives and nuts). All countries were asked to submit residue data together with details of treatment and of sampling, including period of handling and storage before sampling. This information would be required before December 1969 for consideration this year by the Joint Meeting.

Carbaryl in rice

81. It was agreed to submit a temporary tolerance of 2.5 ppm in rice to the Commission at Step 5 of the Procedure (see Appendix VII).

82. The delegation of the Netherlands expressed their opinion that the proposed tolerance was unnecessarily high and proposed to retain 0.8 ppm.

Carbaryl in fruit

83. The Committee agreed to submit a temporary tolerance of 10 ppm in fruit to the Commission at Step 5 of the Procedure (see Appendix VII).

84. The delegation of the Netherlands, supported by the delegations of Belgium, France and the Federal Republic of Germany, considered that the figure ought to be 3 ppm. The delegation of the U.S.A. emphasized that a tolerance of 10 ppm was necessary according to good agricultural practice for the control of some insects.

85. The delegation of the Netherlands stated that they could not agree with the inclusion of melons under this heading.

Carbaryl in vegetables (except leafy vegetables, brassica and cucurbits)

86. The Committee considered the temporary tolerance of 5 ppm in vegetables (except leafy vegetables, brassica and cucurbits). The delegation of the Netherlands stated that if a reasonable waiting period is used, a tolerance of 3 ppm is sufficient. The delegations of Belgium and the Federal Republic of Germany supported the figure of 3 ppm.

87. The Committee agreed that the temporary tolerance of 5 ppm in vegetables (except leafy vegetables, brassica and cucurbits) be submitted to the Commission at Step 5 of the Procedure (see Appendix VII).

Carbaryl in leafy vegetables, brassica and cucurbits

88. The Committee agreed to submit the temporary tolerance of 10 ppm in leafy vegetables, brassica and cucurbits to the Commission at Step 5 of the Procedure (see Appendix VII). It was agreed that cucurbits should include cucumbers, melons (including canteloupes), pumpkins and squash.

Carbaryl in olives and nuts

89. The Committee considered the temporary tolerance of 10 ppm in olives and nuts. Some doubt was expressed about the figure for nuts because this figure would be unnecessarily high when applied to shelled nuts. The delegation of France expressed doubt concerning the figure for olives, because this figure appeared too high.

90. The Committee agreed to submit the temporary tolerance of 10 ppm in olives and nuts to the Commission at Step 5 of the Procedure (see Appendix VII) and requested the Joint Meeting to clarify whether the tolerances referred to fresh olives and unshelled nuts.

Carbaryl in raw cottonseed

91. The Committee considered the temporary tolerance of 5 ppm in cottonseed. The representative from FAO indicated that the recommendation applied to the whole cottonseed.

92. The question was raised whether animal feed is a matter which can be discussed by this Committee. It was concluded that the task of the Committee included controlling animal feed, because in this way residues in human foods can be controlled. The delegation of Australia pointed out that cottonseed is used as a raw material for oil, which is intended for human consumption.

93. The Committee agreed that the temporary tolerance of 5 ppm in raw cottonseed be submitted to the Commission at Step 5 of the Procedure (see Appendix VII).

Carbaryl in poultry

94. The Committee considered the temporary tolerance of 5 ppm in poultry. The delegation of the Netherlands was of the opinion that the limit of 5 ppm for poultry was unnecessarily high. It was noted that the figure of 5 ppm was not expressed on a fat basis but on whole meat, including skin.

95. The Committee agreed to submit the temporary tolerance of 5 ppm in poultry on a whole meat basis, including skin, to the Commission at Step 5 of the Procedure (see Appendix VII).

CHLORDANE

Chlordane in raw cereals (except sweet corn and popcorn)

96. It was noted that in the Report of the 1967 Session of the Joint Meeting, a temporary tolerance was recommended for sweet corn and popcorn.

97. The Committee agreed to submit the practical residue limit of 0.1 ppm in raw cereals (except sweet corn and popcorn) to the Commission at Step 5 of the Procedure (see Appendix VII).

Chlordane in fruits and vegetables

98. The delegations of Denmark and the Federal Republic of Germany stated that they were against the use of chlordane and that they could not accept any tolerance for this compound. The delegation of Norway could accept these tolerances for international trade but stated that the use of chlordane would not be authorized in that country. The delegations of Belgium, France and the Netherlands indicated that they could only agree with temporary tolerances of 0.1 ppm for the different commodities listed below: sweet corn, popcorn, sugar beets, pod vegetables, berries and pineapple.

99. The Committee agreed to submit the temporary tolerance of 0.1 ppm in sweetcorn, popcorn, sugar beets, pod vegetables (in the whole pod) and berries, and a temporary tolerance of 0.2 ppm in pineapple to the Commission at Step 5 of the Procedure (see Appendix VII).

Vegetables (except carrots and pod vegetables)

100. The Committee agreed to consider large and small root vegetables (except carrots), leafy and stalk vegetables as one group.

101. The Committee decided to submit a temporary tolerance of 0.3 ppm in vegetables (except carrots and pod vegetables) to the Commission at Step 5 of the Procedure (see Appendix VII).

Tomatoes, peppers, eggplants and pimento

102. The Committee discussed the term: "tomatoes (and related garden crops)" as is stated in the monograph of the 1967 Session of the Joint Meeting, and interpreted this to mean "tomatoes, peppers,

eggplants, and pimentos". The Committee agreed to submit the temporary tolerance of 0.1 ppm in tomatoes, peppers, eggplants and pimentos to the Commission at Step 5 of the Procedure (see Appendix VII).

Cucumbers, melons (including cantaloupes), pumpkin and squash

103. In order to clarify which crops are included in the term "cucurbits" the Committee decided to use the full description from the monograph of the 1967 Session of the Joint Meeting. The Committee agreed to submit the temporary tolerance of 0.2 ppm in cucumbers, melons (including cantaloupes), pumpkin and squash to the Commission at Step 5 of the Procedure (see Appendix VII).

DDT

(The limits apply to DDT, DDD and DDE singly or in any combination)

104. A general discussion took place regarding DDT. It was pointed out that in many areas the main questions are related to ecological factors rather than human health. The representative of FAO drew the attention of the Committee to the need for DDT in some areas of the world and the potential problems associated with many of the suggested substitutes. The delegation of the Netherlands supported this view and also drew attention to the possibility that any ban of a particular compound could have serious repercussions in developing countries. These statements were supported by the majority of the delegates. The representative of WHO indicated that DDT was to be considered by the WHO Expert Committee on Pesticide Residues at the 1969 Session of the Joint Meeting.

105. In view of the reconsideration of DDT by the countries themselves and by WHO, the Committee decided not to discuss the individual tolerances and practical residue limits for the different commodities. The delegation of the Federal Republic of Germany, supported by the Netherlands, proposed to establish tolerances not higher than 1 ppm.

106. Special attention of the Joint Meeting was drawn to a need to reexamine the temporary tolerance in fish (on a fat basis). In the opinion of the Committee this should not be considered as a temporary tolerance but should be a practical residue limit. There was also some doubt about the magnitude of the figure. Countries were asked to send all the available data on fish to the Joint Meeting before December 1969.

107. The Committee agreed to submit to the Commission at Step 5 of the Procedure (see Appendix VII) tolerances as follows:

- 7 ppm in apples, pears, peaches, apricots, berries, vegetables, (except root vegetables), meat, poultry and fish (on a fat basis)
- 3.5 ppm in cherries, plums, citrus fruit and tropical fruit
- 1 ppm in strawberries, root vegetables and shelled nuts.

also practical residue limits of

0.05 ppm in whole milk and of  
1.25 ppm in milk products (on a fat basis).

#### DIAZINON

##### Diazinon in fruit

108. The Committee agreed that the temporary tolerance of 0.5 ppm diazinon in fruit (except peaches and citrus fruit), 0.7 ppm in peaches and 0.7 ppm in citrus fruit be submitted to the Commission at Step 5 of the Procedure (see Appendix VII).

109. The delegation of Canada expressed their reservation with regard to 0.5 ppm in cherries. The delegation of the Netherlands, supported by the delegation of the Federal Republic of Germany, proposed a tolerance of 0.5 ppm for all fruits and vegetables.

##### Diazinon in vegetables, except cole crops and leafy vegetables

110. The Committee agreed that the temporary tolerance of 0.5 ppm in vegetables (except cole crops and leafy vegetables) and of 0.7 ppm in cole crops and leafy vegetables, be submitted to the Commission at Step 5 of the Procedure (see Appendix VII).

##### Diazinon in meat

111. The Committee noted that the recommendation of the Joint Meeting had been based on figures at slaughter and it was agreed that the temporary tolerance of 0.75 ppm diazinon in meat (on a fat basis) be submitted to the Commission at Step 5 of the Procedure (see Appendix VII).

112. The question was raised whether this figure would have to be considered as a practical residue limit. The representative of FAO pointed out that diazinon was actually sprayed on cattle, and for this reason the Joint Meeting had established a tolerance.

#### DICHLORVOS

(Including content of dichloroacetaldehyde (DCA) where present.)

##### Dichlorvos in raw cereals and cereal products

113. The Committee agreed to submit a temporary tolerance of 2 ppm in raw cereals and 0.3 ppm in cereal products to the Commission at Step 5 of the Procedure (see Appendix VII).

114. Although an interpretation was given that "cereal products" included all milled products from cereal grain, several delegations expressed their opinion that the term needed definition. The Committee agreed that the Joint Meeting be requested to clarify this matter.

Dichlorvos in vegetables, except canned and frozen vegetables

115. The Committee agreed to submit a temporary tolerance of 0.3 ppm dichlorvos in vegetables (except canned and frozen vegetables) to the Commission at Step 5 of the Procedure (see Appendix VII).

116. The delegation of the Netherlands pointed out that a figure of 0.1 ppm would be more desirable.

Dichlorvos in canned and frozen vegetables

117. Several delegations expressed concern about the need for tolerances for canned and frozen commodities different from those on raw commodities. It was also pointed out that if the Codex Committee on Pesticide Residues were to establish tolerances for each specific food item the task would become very great. Some delegations felt it necessary to supply detailed lists of tolerances and practical residue limits to Codex Commodity Committees so that they can be included in the chapters on contaminants and to consult especially the Committee on Processed Fruits and Vegetables on this subject.

118. The Committee agreed to submit the proposals for a temporary tolerance of 0.1 ppm dichlorvos in canned and frozen vegetables to the Commission at Step 5 of the Procedure (see Appendix VII). It was also agreed to draw attention to the importance of looking at residues in processed foods because these foods form a very important part of the daily diet.

119. The delegation of the Federal Republic of Germany pointed out that in the case of processed products good manufacturing practice would have a strong bearing on the follow-up of tolerances from raw products through to processed products. For this reason the elaboration of a code of practice should not only contain guidelines for good agricultural practice, but should also take into account good manufacturing practice.

Dichlorvos in fruit, except citrus fruit

120. The Committee agreed to submit a temporary tolerance of 0.1 ppm dichlorvos in fruit (except citrus fruit) to the Commission at Step 5 of the Procedure (see Appendix VII).

DIMETHOATE

(The limits apply to dimethoate plus its oxygen analogue and are expressed as dimethoate.)

Dimethoate in tree fruits, including citrus fruit

121. The Committee agreed to submit a temporary tolerance of 2 ppm in tree fruit (including citrus fruit) to the Commission at Step 5 of the Procedure (see Appendix VII).

122. The delegations of Denmark, France and the Federal Republic of Germany were of the opinion that 1.5 ppm was sufficient. The delegation of Canada stressed that the proposed tolerance was too low and that in their country a limit of 4 would be required.

Dimethoate in vegetables, except tomatoes and peppers

123. The Committee agreed to submit a temporary tolerance of 2 ppm in vegetables, except tomatoes and peppers, to the Commission at Step 5 of the Procedure (see Appendix VII).

124. The delegations of Denmark, France and the Federal Republic of Germany reserved their positions as in paragraph 122. The delegation of Canada emphasized that they required a tolerance of 4 ppm in leafy vegetables.

Dimethoate in tomatoes and peppers

125. The Committee agreed to submit a temporary tolerance of 1 ppm dimethoate in tomatoes and peppers to the Commission at Step 5 of the Procedure (see Appendix VII).

HEPTACHLOR

(The limits apply to combined residues of heptachlor and heptachlor epoxide determined and expressed as heptachlor.)

Heptachlor and heptachlor epoxide in raw cereals

126. The Committee agreed to submit a practical residue limit of 0.02 ppm heptachlor in raw cereals to the Commission at Step 5 of the Procedure (see Appendix VII).

Heptachlor and heptachlor epoxide in vegetables

127. The Committee agreed to submit a practical residue limit of 0.05 ppm heptachlor in vegetables (except carrots) and the practical residue limit of 0.1 ppm in carrots, to the Commission at Step 5 of the Procedure (see Appendix VII).

HYDROGEN PHOSPHIDE

Hydrogen phosphide in cereal products (only items to be cooked),  
dried vegetables and spices

128. The delegations of Denmark and Israël suggested that there was no need to set tolerances for hydrogen phosphide since the Joint Meeting had found it unnecessary to establish an ADI for this substance. Several delegations pointed out that the uncooked product could contain residues which would disappear completely during cooking and that limits, therefore, were needed.

129. The delegation of Canada stated that it was necessary to know the purity of the chemical used. The Committee stressed that the Joint Meeting should clarify the class of foods referred to as "cereal products".

The Committee agreed to forward a tolerance of 0.01 ppm for the above commodities, this being the limit of detection, to the Commission at Step 5 of the Procedure (see Appendix VII).

#### PARATHION

##### Parathion in vegetables, except carrots

130. The Committee agreed to submit a temporary tolerance of 0.7 ppm in vegetables (except carrots) to the Commission for consideration at Step 5 of the Procedure (see Appendix VII).

131. The delegation of the Netherlands, supported by the delegations of Belgium, Denmark, the Federal Republic of Germany, Finland, and France considered that 0.5 ppm was an adequate limitation. The delegation of the U.S.A. reserved their position with regard to 'leafy vegetables'.

##### Parathion in fruit

132. Pending the clarification of a discrepancy between recommendations given in the monograph and the Report of the 1967 Joint Meeting, the Committee agreed to retain the proposed temporary tolerances for fruits at Step 4 of the Procedure (see Appendix VIII).

#### LINDANE

##### Lindane in raw cereals

133. The Committee agreed to submit a temporary tolerance of 0.5 ppm lindane to the Commission at Step 5 of the Procedure (see Appendix VII).

134. The delegation of France could not agree with the proposed figure and pointed out that in their country 3 ppm would be required. The delegation of Canada could agree with the proposed tolerance as long as lindane is only used on cereals during growth. They could not agree, however, with any tolerance for the use of lindane during processing and transport. The delegation of Denmark agreed with the proposed tolerance but indicated that in their country the use of lindane on raw cereals is prohibited.

##### Lindane in small fruits and vegetables

135. The Committee agreed to submit a temporary tolerance of 3 ppm for the above commodities to the Commission at Step 5 of the Procedure (see Appendix VII). It was agreed that the class of small fruits would cover cranberries, cherries, grapes, plums and strawberries in this case.

136. The delegations of the Netherlands and the Federal Republic of Germany reserved their positions since a higher figure than 2 ppm in small fruits and vegetables was not acceptable in the absence

of a description of the foods covered by these classes. The delegation of Finland pointed out that the tolerance for small fruits and vegetables was 1 ppm in that country.

Lindane in meat

137. As lindane is purposely applied on animals, some delegates were of the opinion that the limits of 2 ppm in meat should not be classified as a practical residue limit, but as a tolerance. The delegations of Canada and the U.S.A. reserved their positions with regard to the suitability of the limit. The Committee, therefore, decided to retain the proposals for a practical residue limit of 2 ppm for lindane in meat at Step 4 of the Procedure (see Appendix VIII) and to request the Joint Meeting to re-examine this matter.

Lindane in poultry

138. It was also believed that there may be a need for a practical residue limit in poultry. The Joint Meeting should be asked to examine this question. Members were asked to submit relevant data.

General remarks

139. In connection with the conclusion of the discussion of the tolerances, temporary tolerances and practical residue limits at this Step of the Procedure, the delegation of New Zealand, supported by the delegation of Australia, expressed their concern about the great number of reservations which had been brought forward regarding the proposed figures, as this could only lead to serious retardation of the international agreement in this field. The above delegations suggested that countries wishing to propose tolerances either higher or lower than those proposed by the Joint Meeting, should be required to submit detailed data to substantiate their proposed amendments.

PART IV

TOLERANCES, TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS AT  
STEP 2 OF THE PROCEDURE

140. The Committee had before it the Report of the 1968 Joint Meeting on Pesticide Residues (Pesticide Residues in Food, FAO Agricultural Studies No. 78; WHO Technical Report Series No. 417).

141. The Delegation of Australia requested that the proposed temporary tolerance of 0.02 ppm for carbaryl be withdrawn. Since the original submission for the establishment of a temporary tolerance was proposed, some new information, which could change the recommendation, had been received. It was stated that a further submission to the Joint Meeting would be made by the Australian Delegation within the next year. The Committee decided to ask the Joint Meeting to review the proposed tolerance for carbaryl in whole milk.

142. With regard to ethion in meat, the Delegation of Australia stated that in a significant number of samples examined, levels up to 2.5 ppm had been found and that, therefore, the figure of 1.5 ppm on a fat basis would not be acceptable, because under Australian conditions it was not possible to observe the 3-day holding period. This was supported by the Delegation of the USA. The Committee requested that information on the levels of residues of ethion in meat be re-examined by the Joint Meeting.

143. The Committee agreed that the tolerances, temporary tolerances and practical residue limits appearing in Appendix IX be sent to Governments for comment at Step 3 of the Procedure.

PART V

DEFINITION OF PESTICIDE RESIDUES

144. The Committee discussed the definition of pesticide residues appearing in Appendix VII of the report of its last session and a working paper prepared by the Delegation of the U.K. summarizing government comments on that definition and making some proposals. The Secretariat pointed out that this Committee had been asked, at the fourth session of the Commission, to develop a definition of pesticide residues. The Commission considered this to be necessary for a better understanding of the General Principles of the Codex Alimentarius. The Commission had emphasized that this definition was not intended to be obligatory for use by governments in their National Food Legislation.

145. It was further pointed out that Codex Commodity Standards contained a section on contaminants and that the definition of pesticide residues should be drafted in such a way as to distinguish between pesticide residues and other contaminants; the definition should indicate that the term "pesticide residue" includes any significant degradation products.

146. The Committee's attention was drawn to the fact that the word "pesticide" had not been defined and that this also was a matter to be considered.

147. The Committee agreed that the present wording appearing in Appendix III of this report could be regarded as a provisional working definition and participants were requested to send their comments on the definition as well as on the paper prepared by the U.K. (CCPR/69/7) to the Secretariat. The Secretariat was requested to examine comments received and to prepare an amended definition, paying particular attention to the needs of the Codex Alimentarius Commission, for the next session of the Codex Committee. The Delegation of the U.K. agreed to assist in this task.

## PART VI

### CLASSIFICATION OF FOOD AND DEFINITION OF FOOD GROUPS

148. The Committee had before it a document prepared by the FAO Secretariat (CCPR/69/8/1) as well as a Conference Room Document, prepared by the Netherlands, of the same number.

149. During the discussion it was suggested that the classification of foods for the purpose of establishing Codex tolerances should be examined in consultation with other Codex Committees, particularly with those involved in the standardization of the foods concerned. It was pointed out that this should involve the Joint Meeting so that tolerances which had been already recommended would be taken into account.

150. The definition of a food group for the purpose of establishing tolerances for pesticide residues may not always coincide with the definitions already established by Codex Commodity Committees. The Committee's attention was drawn to the fact that there were terms already in existence which were being used in commerce and that these should also be taken into consideration.

151. It was agreed that the Joint Meeting should be requested to examine the above papers to see whether the proposals contained therein were suitable for the work of the Joint Meeting in making recommendations for tolerances. The Committee requested delegations present at the session to send their detailed comments on both documents to the Secretariat and that these comments, together with the conclusions of the Joint Meeting on Pesticide Residues, be placed before the next session of this Committee.

## PART VII

### MATTERS OF INTEREST TO THE CODEX COMMITTEE ON PESTICIDE RESIDUES

152. The Committee had before it a document prepared by the Secretariat (CCPR/69/8) and took note of the information contained therein.

Cooperation with IUPAC regarding the elaboration of Codex  
Methods of Analysis

153. The Committee noted that the Commission, at its last session, agreed that closer collaboration with IUPAC was desirable and that the Codex Committee on Pesticide Residues should take steps to achieve this (paragraph 87, ALINORM 69/67). The Committee recalled that the Joint Meeting had already established close contact with IUPAC in making recommendations for methods of analysis for pesticide residues.

154. It noted that according to paragraph 8 of the "Guidelines for Codex Committees", Codex Committees may assign specific tasks to international organizations represented at their sessions; this enabled the Codex Committee on Pesticide Residues to consult IUPAC on specific matters arising from the discussions on methods of analysis to be recommended as international referee methods. It was pointed out that, in addition to the above, under the Procedure for the Elaboration of Codex Standards several opportunities existed for interested international organizations to send their comments on proposed Codex Methods of Analysis for Pesticide Residues.

155. It was agreed that, in view of the above, opportunity already existed for a close cooperation with IUPAC and that no further steps were needed in this respect.

Methods of Analysis recommended by the Joint Meeting

156. The Committee had before it working papers (CCPR/69/8/3) and CCPR/69/8/4) containing government comments on methods of analysis so far recommended by the Joint Meeting on Pesticide Residues, as well as the IUPAC Information Bulletin No. 34, April 1969. The Committee noted that the receipt of government comments on methods of analysis, as in these papers, was in accordance with the agreed procedure whereby methods of analysis should accompany proposed limits for pesticide residues at the same Steps in the Procedure.

157. Government comments should also be requested on these methods of analysis and such comments should be made available to the Committee at the next Step in the Procedure. It was also agreed to refer the papers CCPR/69/8/3 and CCPR/69/8/4 to the Joint Meeting for comments.

PART VIII

REVISION OF THE PRIORITY LISTS

Priority List IV

158. The representative of FAO informed the Committee that thiabendazole could not be considered at the 1969 Joint Meeting because the monographs had not been received in time. The Committee agreed to include these compounds in Priority List V. The revised Priority List IV is given in Appendix X.

Priority List V

159. The Committee considered the various papers containing justification for use of the pesticides in this Priority List and noted that no justification was received for barban, 2,4-D, 2,4,5-T and dichloropropene (whether or not mixed with dichloropropane).

160. In keeping with paragraph 76 of the report of the 1968 session (ALINORM 69/24) and with present knowledge the Committee decided to delete 2,4-D, 2,4,5-T, barban, atrazin, simazin, prometryn, di-allate, metobromuron, chloroxuron, fluometuron and dichloropropene (whether or not mixed with dichloropropane) from Priority List V.

161. The Committee requested countries to supply data on paraquat and diquat to the Joint Meeting. As regards the organotin compounds, the Delegation of the Netherlands stated that they would supply information on fentin acetate, fentin chloride and fentin hydroxide. The Delegation of Israel drew the attention of the Committee to the need to consider organo-arsenic compounds such as sodium methyl-arsenate and also organotin compounds such as tricyclohexyltin.

162. No new compounds were added to List V in order to prevent overloading the agenda of the 1970 Joint Meeting. The data, with or without monographs should be made available before the end of June 1970, or earlier if possible, and are listed in Appendix X.

Establishment of Priority List VI

163. The Committee agreed that those compounds, except for 2,4,5-T, barban, di-allate, and dichloropropene, which were deleted from Priority List V, should be included in List VI. It was noted that justifications for use had already been received for the nine compounds sponsored by Switzerland and for the two compounds sponsored by the Federal Republic of Germany. The Committee took note of a room document presented by the Delegation of the Netherlands containing compounds which could be of interest for future Priority Lists. The compounds tentatively listed in Priority List VI are shown in Appendix X. a/

PART IX

FUTURE WORK

164. Various delegations proposed the establishment of tolerances or practical residue limits on additional commodities for certain pesticides. The pesticides have been considered by the Joint Meeting in the establishment of other practical residue limits or tolerances.

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a/ Working documents containing justification for the use of these pesticides should be sent to the Chairman of the Committee with a copy to the Chief, Food Standards Programme, FAO, Rome, before 1 May 1970.

165. Canada

piperonyl butoxide	1 ppm	cod fish
pyrethrins	0.1 ppm	cod fish

The Delegation of Canada will undertake to supply the Joint Meeting with relevant data to support the above proposals.

inorganic bromide	50 ppm	muskmelon
"	125 ppm	banana pulp
"	60 ppm	egg plant
"	40-50 ppm	pineapple
"	130 ppm	endive and lettuce

As regards the above proposals for inorganic bromide the Delegation of Canada indicated that these tolerances had been established in compliance with the requirements of the exporting countries and that no data could be made available to the Joint Meeting.

166. The Netherlands

dichlorvos	meat
pyrethrins	fresh fruits
pyrethrins	fresh vegetables
chlordane	carrots (practical residue limit)

The representative of FAO indicated that residue data to support the above proposals would be needed by the Joint Meeting.

167. Denmark

DDT	fish
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The Delegation of Denmark indicated that a practical residue limit should be recommended for this commodity and that, to his knowledge, relevant data could be obtained from Sweden and possibly the USA.

Matters not dealt with by the 1968 Joint Expert Meeting on Pesticide Residues

168. The Committee noted that a number of proposed tolerances had not been considered by the Joint Meeting because of a lack of adequate residue data, i.e.

carbaryl	1 ppm in raw cereals
	cocoa beans and derived products from pre-harvest treatment
DDT	cocoa beans and derived products from pre-harvest treatment
heptachlor	0.05 ppm in sugar beet (practical residue limit) (see para. 42)
inorganic bromide	cocoa beans and derived products
lindane	cocoa beans and derived products from pre-harvest treatment

malathion

for meat (on a fat basis)

PART X

OTHER BUSINESS

Procedure for the elaboration of pesticide residue tolerances

169. The Delegate from Israel expressed his Government's concern over the length of time required for the establishment of a Codex tolerance. He pointed out that the time schedule may also have an effect on the development of new pesticides by industry. It was pointed out to the Delegate that there is a possibility of speeding up the procedure by omitting Steps 6, 7 and 8.

170. The representative of FAO requested the cooperation of industry in order to expedite the establishment of international tolerances. It was suggested that once an industry has established patent protection they may wish to supply data to FAO and WHO as the data are developed. At present FAO and WHO were not staffed to process these data. In response it was pointed out that this suggestion would be discussed at the next meeting of GIFAP.

Government comments

171. The Australian Delegation asked if the Committee desired government comments in detail rather than in brief "yes" and "no" answers. The Committee agreed that detailed comments were desired. It was pointed out that during the Committee meeting a reservation on the part of a delegation indicated that a future decision would be made. When a delegation rejected a proposed limit the rejection should be accompanied by reasons.

Guidelines for the handling of pesticides during transport

172. The Delegation of Canada referred to page 20, Section C, of the report of the 1968 meeting. The Canadian Delegation informed the Committee that it had contacted and worked with the Intergovernmental Maritime Consultative Organization (IMCO) Safety Committee regarding the protection of food during transit by ship, and that IMCO had expressed intense interest in this work. The Canadian Delegation indicated that they were assisting in the preparation of a document which will lead to an Operations Manual for the guidance of ships' captains in the use of pesticides. The Canadian document and subsequent manual will be prepared in cooperation with WHO. This document and manual are of interest to WHO and ILO with respect to the occupational hazards from pesticide use. The resultant residues likely to occur from such treatment of foods moving in international trade are of interest to the Codex Committee on Pesticide Residues. The interests of the Codex Committee on Pesticide Residues will be taken into account in the preparation of the proposed IMCO manual.

DDT

173. The Delegation from New Zealand asked whether or not the statements regarding the use of DDT in the protection of human health, as expressed at this meeting, were to be made known outside this Committee. The representative of FAO indicated that this matter would probably arise at the forthcoming FAO Conference.

PART XI

Time and place of next meeting

174. During the discussion of the time for the 1970 session of the Committee, it was pointed out that, in order to avoid a clash with sessions of IUPAC and the VII International Congress for Plant Protection, the next session of this Committee could be held from 28 September to 6 October 1970.

175. The Committee noted that the exact dates and location will be fixed by the Secretariat of the Committee in consultation with the Joint FAO/WHO Food Standards Programme, taking into account the proposed timetable of Codex sessions agreed by the Commission

Adoption of the report

176. The Committee adopted the Draft Report with amendments as the Report of its 4th Session.

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REPORT OF THE AD HOC DRAFTING GROUP  
ON PRINCIPLES FOR ESTABLISHING AND ENFORCING  
PESTICIDE RESIDUE TOLERANCES

Ottawa, Canada

9-13 June 1969

The Report of the Ad Hoc Drafting Group was discussed as a working paper by the Codex Committee on Pesticide Residues at its present session and is appended for the convenience of the readers. For details of the discussions and decisions the reader is referred to paragraphs 6 to 33 of the present Report of the Codex Committee.

## Introduction

1. The Ad Hoc Drafting Group on Principles for Establishing and Enforcing Pesticide Tolerances met in Ottawa at the invitation of the Government of Canada in accordance with the following recommendation appearing in paragraph 70 of the Report of the Third Session of the Codex Committee on Pesticide Residues:

"an Ad Hoc Drafting Group be convened to prepare a working document containing general principles for the establishment of Codex tolerances and other related conclusions for discussion at the next session of this Committee. The Delegation of Canada indicated that, subject to confirmation his government might be willing to act as a host to the above Drafting Group. The following Delegations indicated that, subject to approval by their individual governments, they would accept invitations to be members of the Drafting Group: Australia, Canada, Denmark, The Federal Republic of Germany, France, The Netherlands, The United Kingdom and The United States of America".

The meeting was opened by the Chairman, Dr. J.C. Woodward, Assistant Deputy Minister, Research, Canada Department of Agriculture. Dr. A. Krusysse, Chairman of the Codex Committee on Pesticide Residues was unanimously elected Vice-Chairman of the meeting. The Group was informed that both FAO and the Joint FAO/WHO Food Standards Program were represented by Dr. Whittemore. The names of the participants are listed in Appendix I to this report.

It was agreed that the terms of reference of this Ad Hoc Drafting Group would be met by the preparation of this Report which will constitute the working document.

## Adoption of the Agenda

2. The Provisional Agenda was discussed in detail and some revisions were made. The Final Agenda appears as Appendix II to this report.

## Terms used

3. The Group took note of the definitions appearing in the Glossary of Terms, Appendix I in the "Report of the 1967 Joint Meeting of the FAO Working Party on Pesticide Residues and the WHO Expert Committee on Pesticide Residues". Although it was agreed that these definitions could be improved, the Group decided to use them in their present form for this report, since a discussion of these terms was not within the mandate of this Group.

## Interpretation of International Tolerance

4. The Committee agreed that since both tolerances and practical residue limits are in fact actionable limits, for the sake of convenience, whenever the word "tolerance" is used, practical residue limits will also be understood.

There was considerable discussion as to whether it was feasible to have an international tolerance which might differ from the national tolerance. The Group considered the decision of the Sixth Session of the Codex Alimentarius Commission (paragraph 85) which stated that:

"the Commission agreed that there was no question under the General Principles of the Codex Alimentarius of Codex tolerances for pesticide residues applying only to imported produce".

To the Group the statement meant that a country accepting a Codex tolerance for a given pesticide would be required to approve the same tolerance internally and that this, consequently, seemed to imply that the country would have to permit the use of the pesticide on domestic production whether it was needed or not. This could be contrary to good agricultural practice and the proper use of pesticides in that country. It was felt that this was not what the Commission really intended and thus it is requested that this decision be reconsidered and clarified by the Commission. To give examples of the extent of some of the problems, most countries accept the need for a tolerance for a pesticide on an imported crop when this crop is not grown in their country. Similarly, most countries permit the importation of produce containing residues of a pesticide which is not needed or permitted in their country. The case where difficulties arise is where a pesticide is used both domestically and externally on the same crop and the national tolerance is below the

proposed international tolerance. It was felt that this would apply to a small proportion of the decisions to be made, considering the number of pesticides, food items and governments concerned. However, it was deemed likely that this proportion could still represent an important part of the trade of the exporting country.

#### The Principles to be used to Establish International Tolerances

5. After considerable discussion of the points brought out to support the various positions regarding tolerances presented in the working paper prepared by the Netherlands delegation, the Group examined a brief statement prepared during the meeting by the FAO Staff Member responsible for this program and by the Chairman of the FAO Working Party of Experts on Pesticide Residues. This resumé of the procedures being used by the Joint Meeting of the FAO Working Party of Experts and the WHO Expert Committee on Pesticide Residues, is given in paragraphs 6(a) to (d) below.

#### Procedures for Estimating Tolerances

6. (a) If the Joint FAO/WHO Meeting on Pesticide Residues does not recommend an Acceptable Daily Intake (A.D.I.), it does not recommend a tolerance (except in an unusual case, e.g. hydrogen phosphide for which it is judged there will be no residue at the time of consumption). Another unusual circumstance may arise where an A.D.I. has been recommended for the parent pesticide, but the chemical nature of the residue as consumed may be different and have a component more toxic than the compound. In this case (e.g. dithiocarbamate fungicide residues), no tolerances were recommended pending the development of further information on the nature and amount of various components of the terminal residue. If the A.D.I. is temporary, the tolerances recommended are also temporary for the same period.

6. (b) The residue data derived from supervised trials reflecting good agricultural practice are used to estimate the potential maximum load in the diet for each class of food for which tolerances are being recommended, at present using the ninth decile food consumption figures. The assumptions are made that all food in the class will contain residues at the maximum of the tolerances being considered. If the summation of total number of milligrams of residue per day potentially present in all the raw foods concerned is less than or equal to the A.D.I., the tolerances under consideration are recommended by the Joint Meeting. In some cases, the maximum number of permissible applications, the dosage levels and the intervals between the last application and harvest are specified to provide that the total potential daily intake does not exceed the A.D.I.

6. (c) If the procedure outlined above in (b) suggests an intake of residue substantially in excess of the A.D.I., data on the per cent loss or removal of residue during various steps in processing of food are needed to estimate the amount actually ingested by the consumer. If in the opinion of the Joint Meeting the data suggest that the summation of residues in all classes of food will be below the A.D.I., the tolerances are recommended. If the data pertaining to disappearance during processing are not available, but in the opinion of the Joint Meeting there is a high probability of significant reduction of residues during processing, temporary tolerances will be recommended pending the development of confirmatory data.

6. (d) There are a number of older and widely used pesticides for which sufficient data on the amount and nature of the residues that remain after processing are not available to allow for a recommendation under (c) above, but for which relevant measurements of the amounts of the pesticides being consumed at any time by the population indicate the A.D.I. is not being exceeded when the pesticide has been used for several years under controlled conditions in the countries concerned. In these cases a temporary tolerance may be recommended based on existing national tolerances, pending development of similar data from other countries.

#### Comments

7. The Group reiterated the statement occurring in many reports of the Joint Meeting that any tolerance is subject to change as new scientific information becomes available. It was also of the opinion that the use of the A.D.I. figures to evaluate the safety of given tolerances should only be carried out by appropriate scientists, taking fully into consideration all information supplied by the Joint Meeting.

In the opinion of the Group in the case of determinations made under 6 (b) and 6 (c) only a temporary tolerance should be recommended in the absence of data on the amount and nature of residues in foods as consumed. Concern was expressed as to the increase in the number of temporary tolerances which might retard the work of the Codex Committee on Pesticide Residues

It was also noted that there seemed to be some confusion as to the precise meaning of the term "terminal residue" and requested the Joint Meeting to clarify this term.

In connection with the procedures outlined in 6 (a) to (d) above, it was pointed out that, with some pesticides, there should be a portion of the A.D.I. reserved to take into account other environmental sources of human contamination from non-food uses.

Good Agricultural Practice and its Relationship with International Tolerances

8. The Group suggested that the Joint Meeting should reconsider its definition of good agricultural practice, and was of the opinion that this should be based on the uses recommended by the Government authorities in each country from which information is available. These agricultural practices should take into account the quantities and pesticides needed to adequately control the pests concerned so as to leave a minimum of residue and should also be considered acceptable to the Joint Meeting. International tolerance levels should accommodate such residues providing they are considered to be safe and technologically justified.

The Group considered the possibility of developing Codes of Practice for the use patterns for pesticides, and, recognizing the need but also the magnitude of the task, recommended at this stage that only preliminary steps could be taken, possibly by having the Codex Committee on Pesticide Residues develop General Guidelines for the content of such Codes of Practice, which should give, for example, the pesticide, its formulation, the pest to be controlled, the amount and frequency of application, waiting time and the justification for the use of that compound for that pest.

Comparison of Tolerances and Actual Residue Levels in Diets

9. The Group took note of the Working Paper prepared by the United States and the excerpt from this document appearing at Appendix III. These calculations indicate that it is not realistic to make a calculation based on tolerance in order to estimate the amount actually occurring in the diet. However, where total diet studies are not available, these calculations may be useful in evaluating the safety of tolerance levels for pesticides, providing the Joint Meeting could reach some agreement as to a numerical relationship between intake and tolerance. It was pointed out that this matter had been discussed at the 1968 Joint Meeting.

Estimation of actual Intake from all Sources and Relationship to A.D.I.

10. It was considered that it would be very difficult to evaluate intake from sources other than foods. However, studies made in a small number of countries with temperate climates indicate that for the average consumer, food is the main source of pesticide intake except in special situations. The Group noted that the food intake studies of which it was aware to date usually indicate that the actual intake for a number of widely used pesticides is only a small fraction of the A.D.I. and that in only one instance had the A.D.I. been approached for a short period of time. It was realized that such intake studies have not covered special groups or populations with different consumption patterns.

### Point of Enforcement of Tolerance

11. It was agreed by the Group that the point of enforcement should be in accordance with the phrasing used in the Report of the Sixth Session of the Codex Alimentarius Commission (paragraph 164) "at the point of entry into a country or at the point of entry into trade channels within a country and this tolerance shall not be exceeded at any time thereafter".

### Certification

12. The decision of the Sixth Session of the Codex Alimentarius Commission (paragraph 14) which stated "that any country importing foodstuffs could require a certificate of guarantee from an acceptable source in the exporting country that the product was in conformity with the Codex standard" was noted. The Group considered that the case of pesticide residues was quite different from that for the ordinary standards for food commodities, and that it would be impractical to require certification in respect of pesticide residues. Also, such certification would be a hindrance to international trade in foods, which no exporting country could be expected to carry out, both in terms of time, scientific personnel, equipment and facilities. Furthermore, in the opinion of the Group, such a burden would also be too great to be borne by the commercial food trade, and that they should be discouraged from requiring certification in respect of pesticide residues.

### Sampling

13. The Group discussed sampling as it relates to the problem of determining if a specific lot or a commodity complies with a particular tolerance. In considering the wide variability of commodities and pesticides involved it became clear that obtaining a representative sample of a particular identifiable lot for the purpose of determining the average residue of the lot, and the degree of deviation from the average by any portion of the lot, was indeed a difficult problem. Realizing that the problem of sampling in this special area of pesticide residues in foods has not been dealt with previously in any of the Codex Alimentarius work, the Group recommended that a special study of this problem should be undertaken by experts in statistical sampling, in the practical application of pesticides, in toxicology (to indicate what deviations from a mean could safely be accepted) and in the analysis of foods for pesticide residues (to examine the sampling procedure and relate it to the accuracy of the method of analysis to be used).

### Enforcement Action Following Sampling and Analysis

14. In the opinion of the Group, the differences between the amounts of residues actually permitted by different countries may not be as great as might (at first) appear from an examination of their declared tolerance figures. In some countries the tolerance is a

level of residue above which a regulatory action of some kind is usually taken. In other countries a greater degree of administrative discretion may apply. By allowing for a greater flexibility with regard to deviations from the formal tolerance, including toxicological considerations and possible variations arising from the sampling and analytical procedures used, this may sometimes permit the introduction of individual consignments even though a lower tolerance figure may have been legally specified.

Although the above conclusions represented a useful advance, the Group agreed that further examination of the technological justification for and occurrence of residues in the exporting countries and of the administrative procedures in importing countries is desirable and should further reduce differences in position of the members of the Codex Committee on Pesticide Residues.

#### Methods of Analysis

15. The question of Referee methods was considered by the Group, and the paragraph on this subject in the report of the most recent session of the Joint Meeting was drawn to its attention, as well as the General Principles for the Establishment of Codex Methods of Analysis (Report of the Fourth Session of the Codex Committee on Methods of Analysis and Sampling, ALINORM 69/23, Appendix V, Section 2. (b)), which mention collaborative studies as being "desirable" or "preferable" but not essential.

The Group was of the opinion that pesticide residue analysis is a special case and that it would be unwise to tie tolerances too closely to a single referee method which may become obsolete during the period in which the method will be going through the steps of the Codex procedure. Furthermore experience in using a variety of analytical methods for pesticide residues has shown that there has very seldom been a challenge to the methods. The delegate of the Federal Republic of Germany wished to have noted in this respect that they were still of the opinion that it would be desirable to recommend only one method of pesticide analysis for international acceptance, with any necessary adaptations to cover various food items.

The following procedure would seem to cover the matter suitably in the opinion of the Group:

- (a) Countries or commercial organizations preparing material for the Joint Meeting should include data about methods of residue analysis.
- (b) The Joint Meeting, considering any advice given by IUPAC, should indicate the suitability of published, or other, methods for determining the tolerances that they suggest. In appropriate cases they should also draw attention to the need for further research aimed at the provision of better methods and/or to the need for inter-laboratory studies to test the suitability of methods.

- (c) The Codex Committee, when adopting tolerance recommendations for submission to member governments through the Commission's step-wise procedure, should specifically seek the views of member governments concerning the analytical methods suggested.
- (d) On receipt of comments from member governments the Codex Committee should consider requesting the following action:
  - (i) if the analysis of residues at the levels of the tolerances presents no particular difficulties one method should be suggested by the Joint Meeting, with proven equivalent methods given as alternatives.
  - (ii) if there is a need to nominate a method, and none of those suggested meets with a sufficiently wide acceptance to warrant its adoption without further investigation, such an investigation should be made, preferably in collaboration with IUPAC.

#### Zero Tolerance

16. It was pointed out that zero tolerance is a scientifically unsound concept. Instead, when a given pesticide is approved for use on a crop, a finite figure should be set which defines how closely the tolerance approaches zero. Where a pesticide has not been approved for use, a tolerance level should not be required, although a practical residue limit might be needed in some cases.

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## FINAL AGENDA

for

Ad Hoc Drafting Group of the

Codex Committee on Pesticide Residues

to be held in Room 200 of the West Block,

Parliament Building, Ottawa, Canada,

from Monday, June 9, 1969 at 9:30 a.m. to Friday, June 13, 1969.

1. Introductory Remarks and Nomination of Vice-Chairman.
2. Adoption of the Final Agenda.
3. Confirmation that the definitions to be used in the Working Paper to be produced by this Drafting Group are as defined in the Glossary of Terms, Appendix I in the "Report of the 1967 Joint Meeting of the FAO Working Party on Pesticide Residues and the WHO Expert Committee on Pesticide Residues". Four key terms are: "acceptable daily intake"; "tolerance"; "practical residue limit"; "good agricultural practice".
4. METHODS OF ESTABLISHING INTERNATIONAL PESTICIDE TOLERANCES
  - 4.1. Interpretation of the concepts of international "tolerances" and "practical residue limits" for pesticide residues.
  - 4.2. The principles and methods of calculation to be used to establish "tolerances" and the relationship to "acceptable daily intake".
  - 4.3. The requirements of "good agricultural practice" and its relationship with international tolerances for pesticide residues.
  - 4.4. Comparison of international tolerances, the actual residue levels found at the time of enforcement, and actual residue levels at the time of consumption.
  - 4.5. Methods of estimation of actual intake of pesticide residues from all sources and the numerical relationship of such estimates to the "acceptable daily intake".

FAO, WHO,  
USA and  
Netherlands  
CCPR  
Secretariat  
Working  
Papers

5. METHODS OF ENFORCEMENT OF TOLERANCES

5.1. The point of enforcement of pesticide residue tolerances in domestic and international trade.

5.2. Discussion of occasional certification procedures in the trade in food products in respect of pesticide residues.

5.3. Sampling and methods of analysis for residues (referee and/or equivalent methods).

} U.K. Working Paper

5.4. The concept of "zero tolerance" in the light of advances being made in the field of modern methods of analysis.

6. Other Business.

7. Adoption of the Working Paper.

8. Adjournment of the Drafting Group (by 5:00 p.m., June 13, 1969).

## EXCERPT FROM UNITED STATES

## WORKING PAPER

THE RELATIONSHIP BETWEEN TOLERANCES AND DAILY INTAKE OF PESTICIDES

The word tolerance, in the English language, is defined as "a specified allowance for variation from the standard". The same word has other meanings in common English usage, but in the context, it does not carry the toxicological connotation of "capacity to endure a drug or poison".

The tolerance, as established in English speaking countries and as proposed by the FAO Committee of Experts on Pesticide Residues, is derived from supervised trials in the field under a variety of climatic conditions, application rates, preharvest intervals and other variables. The tolerance therefore is the minimum residue level which allows consistent control of a pest under all practical conditions, or in other words is the residue resulting from good agricultural practice.

Although tolerances are established in part on the basis of good agricultural practice, there is also the requirement that these tolerances control the level of ingestion of a pesticide by man to within a safe level. This is accomplished indirectly, because tolerances limit the dosage, preharvest interval and other conditions of use. More direct control of the level of ingestion is achieved by registration of the pesticide and approval of directions for use.

For many years it has been impossible to measure accurately the relationship of tolerances to intake. Maximum "theoretical intake" figures could be calculated from tolerances and food factors, but these were known to give grossly exaggerated levels which far exceed the A.D.I. (Table 1) However, with the development of improved analytical methods for pesticide residues, it has been possible to sample representative diets of the population and directly determine the average daily intake of pesticides. In addition to providing factual evidence that existing tolerances were indeed controlling the intake within the safe level or A.D.I., these total diet studies have established certain relationships between tolerances and intake.

Table 2 presents the relationship of the "theoretical intake" (calculated from tolerances and food consumption figures) with actual intake (analyzed in total diet studies) for the seven pesticides most prevalent in the diet. The "theoretical intake" is 40 times the actual intake for dieldrin and from 110 to more than 1000 times the actual intake for other pesticides.

This relationship provides an important observation, because total diet studies cannot be conducted on all pesticides because of lack of suitable analytical methods and the lack of actual residue in some instances. In addition, total diet studies obviously cannot be conducted on new pesticides before they are used. For these compounds it is necessary to evaluate the safety of tolerances from some estimated level of intake which will result from the proposed uses within the tolerance.

The above relationship between "theoretical intake" and actual intake for various structural types of pesticides justifies the conservative assumption that the actual intake will not exceed 10% of the "theoretical intake". In evaluating the safety of tolerances for pesticides on which total diet studies are not available, it is a valid procedure to estimate intake at no more than 10% of the "theoretical intake" and compare this figure with the A.D.I. In some cases dissipation of residue or other facts will justify use of a smaller fraction, but in the absence of such data, 10% is a safe and conservative figure.

TABLE I  
COMPARISON OF "THEORETICAL INTAKE" WITH A.D.I.  
FOR MOST PREVALENT PESTICIDES IN THE DIET

<u>Pesticide</u>	<u>A.D.I.</u> <u>mg/day</u>	<u>"Theoretical"<sup>1</sup></u> <u>Intake"</u> <u>mg/day</u>	<u>Multiple</u> <u>of A.D.I.</u>
DDT	0.60	6.79	11
lindane	0.75	9.21	12
dieldrin	0.006	0.23	40
parathion	0.30	1.18	4
malathion	1.20	12.56	10
carbaryl	1.20	9.50	8

<sup>1</sup> Calculated from major U.S. tolerances and 9th decile consumption figures; minimum figure since small consumption commodities are excluded. U.S. Tolerances used for calculation were those in effect during time of total diet studies 1964-1967.

TABLE 2

RELATIONSHIP OF "THEORETICAL INTAKE" TO ACTUAL INTAKE  
OF MOST PREVALENT PESTICIDES IN THE DIET

<u>Pesticide</u>	<u>Theoretical Intake<sup>1</sup></u> <u>From U.S. Tolerances<sup>2</sup></u> 1964-1967 (mg/day)	<u>Actual Intake<sup>3</sup></u> <u>From U.S. Total Diet</u> 1964-1967 (mg/day)	<u>Relationship</u>
DDT	6.79	0.037	180 to 1
lindane	9.21	0.004	>1000 to 1
dieldrin	0.23	0.006	40 to 1
parathion	1.18	<0.001	>1000 to 1
malathion	12.56	0.009	>1000 to 1
carbaryl	9.50	0.082	110 to 1
kelthane	4.45	0.008	550 to 1

1 Calculated from major U.S. tolerances and 9th decile consumption figures; minimum figure since small consumption commodities are excluded.

2 U.S. Tolerances used for calculation were those in effect during time of total diet studies 1964-1967.

3 "Pesticide Residues in Food" R.E. Duggan, FDA, Conference on Biological Effects of Pesticides in Mammalian Systems, New York Academy of Science, May 3, 1967, also "The Regulation of Pesticides in the U.S.", U.S. Department of Agriculture and Health, Education and Welfare, March 1968.

DEFINITIONS

(1) Definition of Pesticide Residues (a)  
(Provisional working definition)

A pesticide residue is a residue in or on a food of any chemical used for the control of pests and the term includes derivatives of such chemicals. The amounts are expressed in parts by weight of the chemical and/or derivate per million parts by weight of the food (ppm).

Explanatory note

In interpreting this definition it is proposed to include the consideration of any substance which may, at a given time, be known to be derived from the product and which may be held to influence the toxicology of the residue. Residues from unknown sources (i.e. background residues) will be considered as well as those from known uses of the chemical in question. The term pesticide will be held to include any constituent of a pesticide used for the control of pests during the production, transport, marketing or processing of food or which may be administered to animals for the control of insects or arachnids in or on their bodies; it will not apply to antibiotics or other chemicals administered to animals for other purposes, such as to stimulate their growth or to modify their reproductive behaviour, or to fertilizers or, at least for the present, to other substances, other than herbicides, used to influence the rate of growth of plants.

(2) Definition of temporary tolerance (b)

A temporary tolerance is one that is valid for a limited time which is specified in each case.

Explanatory note

Such tolerance recommendations are made when they are derived from Temporary Acceptable Daily Intakes or from figures for commodities at some stage prior to the point of consumption as food and when, in the absence of adequate information on losses of residue during storage, handling or preparation, calculations based on such figures using appropriate food consumption data reveal a theoretical possibility that the acceptable daily intake could be exceeded. In cases of this kind, to obtain assurance that acceptable daily intakes are not likely to be exceeded in practice, and before proceeding to recommend temporary tolerances, the meeting considers information on the actual occurrence of residues in food as offered to the consumer. This information includes the results from subjective sampling and/or from objective sampling, including total diet studies, in various countries and particularly in places where pesticides are most widely used. In all cases the position will be reviewed not later than the first meeting following the specified date.

- (a) References: para 144-147 of this Report; Appendix I of the Report of the 1967 Joint Meeting of the FAO Working Party of Experts and the WHO Expert Committee on Pesticide Residues (FAO Meeting Report No. PL: 1967/M/11, WHO Techn. Rep. Ser. No. 391).
- (b) para 144-147 of this report; Appendix I of the Report of the 1967 Joint Meeting of the FAO Working Party of Experts and the WHO Expert Committee on Pesticide Residues (FAO Meeting Report No. PL: 1967/M/11, WHO Techn. Rep. Ser. No. 391).

(1)

TOLERANCES, TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS  
TO BE SUBMITTED TO THE CODEX ALIMENTARIUS COMMISSION AT STEP 8

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (ppm) (2)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
diphenyl		citrus fruit	110		39 - 41
heptachlor	combined residues of heptachlor and its epoxide to be determined and expressed as heptachlor	root vegetables except: carrots potatoes cole crops leafy vegetables meat whole milk milk products	0.1 see Step 5 0.1 0.1	0.05 0.2 on a fat basis 0.005 0.125 on a fat basis	42 - 44 127 45 42 - 44 42 - 44 46 - 47 48 48
hydrogen phosphide		raw cereals	0.1		49
inorganic bromide	determined and expressed as total bromide ion from all sources	avocados citrus fruit strawberries dried dates dried figs dried peaches dried prunes dried raisins (incl. sultanas and dried currants) herbs and spices	75 30 30 100 250 50 20 100 400		59 59 59 - 60 62 - 63 62 - 63 62 62 62 - 63 64
piperonyl butoxide		raw cereals fruit (for canning) dried fruit dried vegetables oil seeds tree nuts	20 8 8 8 8 8		67 - 68 69 69 69 69 69

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2)</u> (ppm)	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
pyrethrins		raw cereals	3	)	)
		fruit (for canning)	1	)	)
		dried fruit	1	)	)
		dried vegetables	1	)	70
		oil seeds	1	)	)
		tree nuts	1	)	)

- (1) FAO Meeting Report PL:1967/M/11 or WHO Tech.Rep.Ser. No. 391  
FAO/PL:1967/M/11/1 or WHO/Food Add./68.10  
 . FAO Agricultural Studies No.78 or WHO Tech.Rep.Ser. No. 417  
FAO/PL:1968/M/9/1 or WHO/Food Add./69.35

- (2) underlined: not temporary  
not underlined: temporary

TEMPORARY TOLERANCES HELD AT STEP 7 AND REFERRED TO THE

JOINT MEETING ON PESTICIDE RESIDUES

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Temporary tolerance (ppm)</u>	<u>Relevant paragraph of this report</u>
aldrin and dieldrin	The limits apply to aldrin and dieldrin singly or in any combination and are expressed as dieldrin	vegetables	0.1	35 - 36
inorganic bromide	Determined and expressed as total bromide ion from all sources	fruit dried fruit (except dried dates, figs, peaches, prunes and raisins) dried eggs	20 30 400	57 - 58 61 65 - 66

TOLERANCES AND PRACTICAL RESIDUE LIMITS (1)

RETURNED TO STEP 6 WITH A REQUEST FOR

FURTHER COMMENTS

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
aldrin and dieldrin	The limits apply to aldrin and dieldrin singly or in any combination and are expressed as dieldrin	whole milk milk products meat		0.005 (2) 0.125 on a fat basis 0.2 on a fat basis	37 - 38
lindane		whole milk milk products		0.008 0.2 on a fat basis	50 - 53
malathion		fruit except: citrus fruit dried fruit nuts vegetables except: leafy vegetables	8 4 8 8 3 6		54 - 56

(1) See references on page 2, Appendix IV

(2) Also referred to the Joint Meeting on Pesticide Residues

TOLERANCES, TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS (1)  
TO BE SUBMITTED TO THE CODEX ALIMENTARIUS COMMISSION AT STEP 5

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2) (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraphs of this report</u>	
aldrin and dieldrin	The limits apply to aldrin and dieldrin singly or in any combination and are expressed as dieldrin	raw cereals except:		0.02	72 - 73	
		rice	0.05		72, 74-75	
		fruit	0.1		72, 76-77	
		except citrus fruit	0.05		72, 78	
		eggs		0.1 on a shell free basis	72, 79	
carbaryl		rice	2.5		80 - 82	
		fruit	10		80, 83-85	
		vegetables except:	5		80, 86-87	
		leafy vegetables	10		80, 88	
		brassica	10		80, 88	
		cucumbers, melons (incl. cantaloups)	10		80, 88	
		pumpkins and squash				
		olives	10		80, 89-90	
		nuts [shelled]	10		80, 89-90	
		raw cotton seed	5		80, 91-93	
		poultry	5 on a whole meat basis including skin		80, 94-95	
	chlordane	residue to be measured as alpha plus gamma chlordane	raw cereals except:		0.1	97
			sweet corn	0.1		96, 98-99
popcorn			0.1		96, 98-99	
berries			0.1		98 - 99	
pineapple			0.2		98 - 99	
sugar beets			0.1		98 - 99	

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2) (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>	
chlordane (continued)		vegetables except:	0.3		98, 100-101	
		carrots			98, 100-101	
		pod vegetables	limit to be established		98 - 99	
		tomatoes	0.1 on the whole pod basis			
		peppers	0.1		98, 102	
		eggplant	0.1			
		pimentos	0.1			
		cucumbers	0.2			
		melons	0.2		98, 103	
		(inc. cantaloups)				
		pumpkins	0.2			
		squash	0.2			
	DDT	The limits apply to DDT, DDD and DDE singly or in any combination	apples	7		
			pears	7		
			peaches	7		
apricots			7			
berries			7			
strawberries			1			
cherries			3.5			
plums			3.5			
citrus fruit			3.5			
tropical fruit			3.5			
vegetables except			7			
root vegetables			1			
meat			7 on a fat basis			
poultry			7 on a fat basis			
fish			7 on a fat basis			
whole milk	0.05					
milk products	1.25 on a fat basis					
nuts (shelled)	1					

104 - 107

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2) (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
diazinon		fruit except: peaches citrus fruit vegetables except: cole crops leafy vegetables meat (3)	0.5 0.7 0.7 0.5 0.7 0.7 0.75 on a fat basis		108 - 109 108 - 109 108 - 109 108 - 109 109 - 110 111 - 112
dichlorvos	Content of dichloroacetaldehyde (DCA) to be reported where possible	raw cereals cereal products vegetables except: canned vegetables frozen vegetables fruit (except citrus fruit)	2 0.3 0.3 0.1 0.1 0.1		113 - 114 113 - 114 115 - 116 117 - 119 117 - 119 120
dimethoate	Residues to be determined as dimethoate and its oxygen analogue and expressed as dimethoate	tree fruit (including citrus fruit) vegetables except: tomatoes peppers	2 2 1 1		121 - 122 123 - 124 125 125
heptachlor	Combined residues of heptachlor and its epoxide to be determined and expressed as heptachlor	raw cereals vegetables except carrots		0.02 0.05 0.1	126 127 127
hydrogen phosphide		cereal products (only items to be cooked) dried vegetables spices	0.01 0.01 0.01		128 - 129 128 - 129 128 - 129

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance(2)</u> (ppm)	<u>Practical residue limit</u> (ppm)	<u>Relevant paragraph of this report</u>
lindane		raw cereals	0.5		133-134, 139
		cranberries	3		)
		cherries	3		)
		grapes	3		)
		plums	3		) 135-136, 139
		strawberries	3		)
	vegetables	3		)	
parathion		vegetables (except carrots)	0.7		130 - 131

- (1) See references on page 2, Appendix IV
- (2) underlined: not temporary  
not underlined: temporary
- (3) Tolerance to be applied at slaughter

TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS

HELD AT STEP 4 AND REFERRED TO THE JOINT

MEETING ON PESTICIDE RESIDUES

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Temporary tolerance (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
parathion		fruit	1	)	
		except:		)	
		peaches	0.5	)	132
		apricots	0.5	)	
	citrus fruit	0.5	)		
lindane		meat		2 on a fat basis	137, 139
		poultry		2 on a fat basis	138, 139

TOLERANCES, TEMPORARY TOLERANCES AND PRACTICAL RESIDUE LIMITS  
TO BE SUBMITTED TO GOVERNMENTS AND INTERNATIONAL ORGANIZATIONS

FOR COMMENTS AT STEP 3 (1)

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2) (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
azinphos methyl		fruit	1	)	143
		except:		)	
		apricots	4	)	
		grapes	4	)	
		vegetables	0.5	)	
inorganic bro- mide	determined and expressed as total bromide ion from all sources	whole-meal flour	50		143
carbaryl		meat of cattle, goat and sheep	1		141, 143
chlorobenzilate		citrus fruit	1	)	143
			on a whole fruit basis	)	
		apples, pears	5	)	
			on a whole fruit basis	)	
		almonds, walnuts	0.2	)	
	on a shell free basis	)			
	melons (including cantaloups)	1	)		

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2) (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
chloroprepylate		citrus fruit, apples, pears tomatoes cantaloups	3 on a whole fruit basis 1 1		143
coumaphos	residues to be determined as coumaphos and its oxygen analogue and expressed as coumaphos	meat (3) poultry (3) eggs	0.5 on a fat basis 0.5 on a fat basis 0.05 on a shell free basis		143
orufomate		whole milk meat (3)	0.05 1 on a fat basis		143
DDT	the limits apply to DDT, DDD and DDE, singly or in any combination	eggs		0.5 on a shell free basis	143
dicofof		fruit vegetables hops tea (blended) except: tea from a particular estate for blending only	5 5 5 1 5		143
dieldrin and aldrin	the limits apply to aldrin and dieldrin singly or in any combination and are expressed as dieldrin	eggs		0.1 on a shell free basis	143

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2) (ppm)</u>	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
dioxathion	residues of cis and trans isomers of principal active ingredient to be determined and expressed as sum of both	pome fruit grapes Citrus fruit meat (3) (excluding poultry)	5 2 3 1 on a fat basis	) ) ) ) )	143
endosulfan	residues should be measured and reported as total of endosulfan A and B and endosulfan sulphate	fruit vegetables	2 2	) )	143
ethion		fruit except: grapes vegetables tea (blended) except: tea from a particular estate for blending only	1 2 0.5 1 7	) ) ) ) ) ) )	142, 143
fenchlorfos	residues of fen- chlorfos and its oxygen analogues to be determined and expressed as fenchlorfos	whole milk egg yolk meat (3)	0.04 0.05 7.5 on a fat basis	) ) ) )	143
lindane		egg yolk	0.2	)	143
malathion		whole meal and flour from rye and wheat	2	)	143

<u>Compound</u>	<u>Analytical method</u>	<u>Food</u>	<u>Tolerance or temporary tolerance (2)</u> (ppm)	<u>Practical residue limit (ppm)</u>	<u>Relevant paragraph of this report</u>
parathion-methyl		fruit	0.2		143
		vegetables except: cole crops cucurbits cottonseed oil	1 0.2 0.2 0.05		
phosphamidon	residues to be determined by cholinesterase inhibition technique and results to be expressed as phosphamidon	raw cereals	0.1		143
		fruit except: apples pears Citrus fruit water melons	0.2 0.5 0.5 0.4 0.1		
		root vegetables (4)	0.1		
		tomatoes	0.1		
		lettuce	0.1		
		cucumbers	0.1		
		cole crops	0.2		

(1) See FAO Agricultural Studies No. 78 or WHO Techn. Rep. Ser. No. 417; FAO/PL: 1968/M/9/1 or WHO/FOOD ADD./69.35

(2) underlined: tolerance  
not underlined: temporary tolerance

(3) tolerance to be applied at slaughter

(4) information is required about the required rates and frequencies of application, pre-harvest intervals and the resultant residues from different countries.

PRIORITY LIST IV

binapacryl	parathion methyl
dinocap	toxaphene
quintozene	formothion
dichlofluanid	thiometon
captan	diphenylamine
folpet	ethoxyquin
difolatan	hexachlorobenzene
ortho-phenylphenol and sodium salt	fenitrothion

PRIORITY LIST V

	<u>Countries responsible for providing information in the form of monographs (a)</u>
thiabendazole	Australia
paraquat	United Kingdom
diquat	United Kingdom
endrin	United States of America
fentin acetate	
fentin chloride	The Netherlands
fentin hydroxide	
chlormequat	Federal Republic of Germany, assisted by the Netherlands.

PRIORITY LIST VI (a)

	<u>Countries responsible for supplying justification for use</u>
2,4-D	United States of America
pyrazon (= PCA)	Federal Republic of Germany *
atrazin	Switzerland *
simazin	Switzerland *
prometryn	Switzerland *
metobromuron	Switzerland *
chloroxuron	Switzerland *
fluometuron	Switzerland *
chlorphenamidine	Switzerland *
metoxuron	Switzerland *
monocrotophos	Switzerland *
bromophos	Federal Republic of Germany *
fensulfothion	Federal Republic of Germany *
mevinphos	The Netherlands
chlorfenvinphos	The Netherlands
phosalone	France
diuron	The Netherlands
trichlorfon	Federal Republic of Germany
trichloronate	Federal Republic of Germany
omethoate	Federal Republic of Germany
fenthion	Federal Republic of Germany
benomyl	United States of America, assisted by the Netherlands

(a) see report of the Third Session and paragraphs 159, 160, 161, 162 and 163 of this report

\*) Justification for use already received