# codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Viale delle Terme di Caracalla 00153 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

**ALINORM 09/32/24**

**JOINT FAO/WHO FOOD STANDARDS PROGRAMME**

**CODEX ALIMENTARIUS COMMISSION**

***Thirty-second Session***
***Rome, Italy, 29 June - 4 July 2009***

# REPORT OF THE FORTY-FIRST SESSION OF THE CODEX COMMITTEE ON PESTICIDE RESIDUES

***Beijing, China, 20 – 25 April 2009***

**Note:** This report includes Codex Circular Letter CL 2009/14-PR

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CX 4/40.2 **CL 2009/14-PR**
**May 2009**

**TO:** - Codex Contact Points

- Interested International Organizations

**FROM:** Secretary,
Codex Alimentarius Commission
Joint FAO/WHO Food Standards Programme
Viale delle Terme di Caracalla,
00153 Rome, Italy

**SUBJECT: DISTRIBUTION OF THE REPORT OF THE FORTY-FIRST SESSION OF THE CODEX COMMITTEE ON PESTICIDE RESIDUES (ALINORM 09/32/24)**

The report of the Forty-First Session of the Codex Committee on Pesticide Residues will be considered by the 32nd Session of the Codex Alimentarius Commission (Rome, Italy, 29 June - 4 July 2009).

**PART A: MATTERS FOR ADOPTION BY THE 32ND SESSION OF THE CODEX ALIMENTARIUS COMMISSION:**

1. **Draft and Draft Revised Maximum Residue Limits for Pesticides at Step 8 (paras 60-130 and Appendix II); and**

2. **Proposed Draft Maximum Residue Limits for Pesticides at Step 5/8 – with omission of Steps 6 and 7 - (paras 60-130 and Appendix III)**

Governments and interested international organizations wishing to submit comments on the above draft and proposed draft MRLs, including the implications they may have for their economic interest, should do so in writing, in conformity with the Procedures for the Elaboration of Codex Standards and Related Texts (*Codex Alimentarius Procedural Manual*), **preferably by email**, to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, Viale delle Terme di Caracalla, 00153 Rome, Italy (fax: +39 06 57054593; e-mail, codex@fao.org) **before 15 June 2009**.

3. **Proposed Draft Maximum Residue Limits for Pesticides at Step 5 (paras 79, 91, 116, 124 and Appendix IV); and**

4. **Proposed Draft Revision of the Codex Classification of Foods and Animal Feeds at Step 5 - *Proposals for Eight Commodity Groups:* *Bulb Vegetables*; *Fruiting Vegetables, other than cucurbits*; *Berries and other Small Fruits*; *Edible Fungi*; *Citrus Fruits*; *Pome Fruits*; *Stone Fruits*; and *Oilseeds* (para. 146 and Appendix IX)**

Governments and interested international organizations wishing to submit comments on the above proposed draft MRLs and related texts, including the implications which they may have for their economic interest, should do so in writing in conformity with the Procedures for the Elaboration of Codex Standards and Related Texts (*Codex Alimentarius Procedural Manual*), **preferably by email**, to the above address **before 15 June 2009**.

**PART B: OTHER MATTERS FOR ACTION BY THE 32ND SESSION OF THE CODEX ALIMENTARIUS COMMISSION**

**5. Codex Maximum Residue Limits for Pesticides recommended for Revocation and Draft Codex Maximum Residue Limits for Pesticides recommended for Withdrawal (paras 60-130 and Appendices V and VIII)**

Governments and interested international organizations wishing to submit comments on the proposed revocations on Codex MRLs or discontinuation of work on draft MRLs should do so in writing, **preferably by email**, to the above address **before 15 June 2009**.

**PART C: REQUEST FOR COMMENTS AND INFORMATION ON:**

**6. Draft Maximum Residue Limits for Pesticides at Step 6 (paras 60-130 and Appendix VII)**

Those countries and observers specified under individual compounds in the ALINORM 09/32/24 concerning matters related to the FAO Panel of the JMPR (GAP, residue evaluation, intake assessment, etc.) on specific pesticide/commodity(ies) to be considered by JMPR 2009 are invited to send information or data to: **1)** Ms Yong Zhen YANG, Agricultural Officer and JMPR Secretary, Viale delle Terme di Caracalla, Rome 00153, Italy, Fax:+39 06 57053224, E-mail: YoungZhen.Yang@fao.org; **2)** Dr Angelika TRITSCHER, WHO JMPR Secretary, Appia Avenue 20, 1211 Geneva 27, Switzerland, Fax: +41 22 791 4848, E-mail: tritschera@who.int; **3)** Dr Zongmao CHEN, Chairperson of the Committee, Academician, Chinese Academy of Engineering, Professor, Chinese Academy of Agricultural Sciences, No.1, Yunqi Road, Hangzhou/Zhejiang 310008, P.R. CHINA, Fax: +86 571 8665 0056, E-mail: ccprc@agri.gov.cn; and **4)** Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme,Viale delle Terme di Caracalla, 00153 Rome, Italy (fax: +39 06 57054593; e-mail: codex@fao.org ) **before 15 June 2009.**

The deadline for the submission of concern forms together with necessary data is **15 June 2009.**

Those countries and observers specified under individual compounds in ALINORM 09/32/24, Appendix XI concerning matters related to the future JMPR meetings (GAPs, residue evaluation, intake assessment, etc.) on specific pesticide/commodity(ies) to be considered at subsequent years by JMPR, are invited to send information or data **one year before** JMPR considers these compounds at the addresses indicated above.

## SUMMARY AND CONCLUSIONS

The summary and conclusions of the 41st Session of the Codex Committee on Pesticide Residues are as follows:

### MATTERS FOR ADOPTION BY THE 32ND SESSION OF THE COMMISSION

**The Committee recommended to the Commission:**

**Adoption of MRLs and other related texts**

- Adoption of draft and draft revised MRLs at Step 8, including proposed draft MRLs at Step 5/8, for pesticide/commodity combinations (paras 60-130 and Appendices II and III);
- Adoption of proposed draft MRLs at Step 5 for pesticide/commodity combinations (paras. 60-130 and Appendix IV);
- Adoption of the proposed draft revision of the *Codex Classification of Foods and Animal Feeds* for eight commodity groups (para. 46 and Appendix IX).

**Revocation of MRLs**

- Revocation of Codex MRLs for pesticide/commodity combinations (paras 60-130 and Appendix V);

**Discontinuation of work**

- Discontinuation of work on the establishment of MRLs for pesticide/commodity combinations (paras 60-130 and Appendix VIII).

**Approval of new work**

- Priority List for the establishment of MRLs for pesticide/commodity combinations (paras 60-130 and Appendix XI);

### MATTERS OF INTEREST TO THE COMMISSION

The Committee:

- agreed to retain several draft and proposed draft MRLs at Steps 7 and 4 respectively awaiting for JMPR evaluation (paras 60-130 and Appendix VI);
- agreed to return several draft MRLs to Step 6 for further comments and consideration at its next session (paras 60-130 and Appendix VII);
- agreed to return the proposed draft revision of the Guidelines on the Estimation of Uncertainty of Results for the Determination of Pesticide Residues to Step 3 for circulation for additional comments and consideration at its next session (para. 160 and Appendix X);
- agreed that the Codex Secretariat would prepare a paper containing an analysis of the references to pesticide residues in CODEX STAN 229-1993 and various sections of Volume 2 of the Codex Alimentarius, which had been discontinued for publication, for consideration at its next session (paras 9-10);
- agreed that the Codex Secretariat would issue a Circular Letter requesting monitoring data for persistent organic pollutants (POPs), falling under the Stockholm Convention and the mandate of the Committee, for commodities for which Codex extraneous maximum residue limits (EMRLs) have been or should be established, for consideration at its next session (paras 15-16);
- agreed that a list of validated analytical methods for the determination of pesticide residues in natural mineral waters would not be developed but maintained as a repository list on the IAEA website and to this purpose, information on such methods would be gathered by means of a Circular Letter to be issued by the Codex Secretariat (para. 21);
- agreed to return the proposed draft Principles and Guidelines for the Selection of Representative

Commodities for the Extrapolation of MRLs for Commodity Groups to Step 2 for redrafting, circulation for additional comments and consideration at its next session (para. 155);

- agreed to discontinue the consideration of a pilot project for achieving globally harmonized MRLs through Codex as no consensus could be reached to initiate such a project (para. 176);
- agreed to return the Risk Analysis Principles applied by the Codex Committee on Pesticide Residues for further revision, circulation for additional comments and consideration at its next session. The Committee acknowledged that the revision should be finalized by 2010 as the Committee on General Principles would review the consistency of risk analysis principles elaborated by relevant subsidiary bodies of the Commission in 2011 (paras 184-185).
- agreed to continue to identify and address issues related to minor uses and specialty crops; elaborate definitions of these terms for use by CCPR and JMPR; identify priority minor uses and specialty crops for MRLs setting for their inclusion in the Priority List and facilitate their submission to JMPR (para. 215);
- noted the information and conclusion on the evaluation of distribution of pesticide residues after primary process in selected products and agreed that a paper on the use of Kow (n-octanol-water partition coefficient) for the estimation of processing factors would be prepared for consideration at its next session (paras 158 and 216); and
- agreed that there was no need for further elaboration of principles and practices related to the establishment of MRLs for processed foods (para. 222).

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**LIST OF ABBREVIATIONS**

(Used in this Report)

| | |
|---|---|
| CAC | Codex Alimentarius Commission |
| CCFA | Codex Committee on Food Additives |
| CCGP | Codex Committee on General Principles |
| CCMAS | Codex Committee on Methods of Analysis and Sampling |
| CCNFSDU | Codex Committee on Nutrition and Foods for Special Dietary Uses |
| CCPR | Codex Committee on Pesticide Residues |
| CCRVDF | Codex Committee on Residues of Veterinary Drugs in Foods |
| CLI | CropLife International |
| EFSA | European Food Safety Authority |
| EWG | Electronic Working Group |
| EC | European Community |
| FAO | Food and Agricultural Organization of the United Nations |
| GEMS/Food | Global Environment Monitoring System - Food Contamination Monitoring and Assessment Programme |
| JECFA | Joint FAO/WHO Expert Committee on Food Additives |
| JMPR | Joint FAO/WHO Meetings on Pesticide Residues |
| OECD | Organisation for Economic Co-operation and Development |
| SPS Agreement | Agreement on the Application of Sanitary and Phytosanitary Measures |
| USA | United States of America |
| WHO | World Health Organization |
| WTO | World Trade Organization |
| ARfD | Acute Reference Dose |
| ADI | Acceptable Daily Intake |
| CXL | Codex Maximum Residue Limit for Pesticide |
| DIE | Daily Intake Estimate |
| GAP | Good Agricultural Practice in the Use of Pesticides |
| EMRL | Extraneous Maximum Residue Limit |
| HR | Highest residue in edible portion of a commodity found in trials used to estimate a maximum residue level in the commodity |
| IESTI | International Estimated of Short-Term Intake |
| MRL | Maximum Residue Limit |

## INTRODUCTION

1. The Codex Committee on Pesticide Residues (CCPR) held its 41st Session in Beijing, China, from 20 to 25 April 2009 at the kind invitation of the Government of China. Professor Chen Zongmao, Academician of the Chinese Academy of Engineering chaired the Session, assisted by Dr Qiao Xiongwu, Vice President, Shanxi Academy of Agricultural Sciences, China, as Vice-chairperson. The Session was attended by 246 delegates representing 71 Member Countries, one Member organization and 10 International Organizations. The list of participants is attached as Appendix I to this Report.

## OPENING OF THE SESSION

2. Mr Zhang Taolin, Vice Minister of Agriculture, China, opened the session. In welcoming participants, he emphasized the important role and achievements of this Committee in ensuring the safety of agricultural products traded internationally. Mr Zhang informed the delegates about the new developments in improving food safety in China, including the new Food Safety Law that had been adopted and would come into force in June 2009, as well as China's continuing efforts to support the work of this Committee.

3. Dr Mukundan Pillay, Environmental Health Adviser, WHO Representative Office in China also welcomed delegates. He thanked the Government of China for its support in hosting two important Codex committees, namely this Committee and the Committee on Food Additives and welcomed the recent developments in China as presented by the Vice Minister of Agriculture. He emphasized the need for such modern food safety laws comprising the farm-to-table concept as recommended by FAO and WHO.

### Division of Competence[1]

4. The Committee noted the division of competence between the European Community (EC) and its Member States, according to paragraph 5, Rule II of the Procedure of the Codex Alimentarius Commission, as presented in CRD 2.

## ADOPTION OF THE AGENDA (Agenda Item 1)[2]

5. The Committee adopted the Provisional Agenda as the Agenda for the Session, noting that the two documents on pesticide residues in processed foods (CX/PR 09/41/10 and CX/PR 09/41/11), which had been in advertently omitted from the Provisional Agenda, would be considered by this session.

## APPOINTMENT OF RAPPORTEURS (Agenda Item 2)

6. Mr David Lunn (New Zealand) and Ms Kathy Monk (United States of America) were appointed as rapporteurs.

## MATTERS REFERRED TO THE COMMITTEE BY THE CODEX ALIMENTARIUS COMMISSION AND/OR OTHER CODEX COMMITTEES (Agenda Item 3)[3]

7. The Committee noted that a number of matters referred from the 31st Session of the Codex Alimentarius Commission (CAC) and the 61st Session of the Executive Committee were for information purposes or would be discussed in more detail by the current session of the CCPR under the relevant Agenda Items.

8. Other issues were discussed as follows.

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1 CRD 2 (Division of the Competence between the European Community and its Member States).

2 CX/PR 09/41/1.

3 CX/PR 09/41/2; CX/PR 09/41/2-Add.1; CRD 2 (Division of Competence Between the European Community and its member States), CRD 3 (European Community), CRD 4 (Kenya), CRD 17 (China).

**Amendments to Codex Standards and Related Texts**

9. Until 2001 Codex standards and related texts had been published in a number of volumes, which had since been discontinued to save costs.

10. The Commission noted that the "Analysis of Pesticide Residues: Recommended methods (CODEX STAN 229-1993)" contained a number of references to different sections of Volume 2 dealing with pesticide residues, which were still valid because they had not been replaced with other texts and which had no separate identification number. The Committee agreed to request the Codex Secretariat to prepare a paper containing an analysis of these discrepancies in order to take a more informed decision on this matter at its next session.

**Persistent Organic Pollutants (POPs)**

11. The Committee noted that the Codex Alimentarius Commission had established a number of EMRLs in the past for pesticides whose agricultural use has been phased out under the Stockholm Convention on Persistent Organic Pollutants (POPs).

12. The Representative of the WHO informed the Committee that DDT will be discussed at the upcoming fourth Conference of the Parties to the Stockholm convention, and that WHO is holding an expert consultation in early June to review DDT and possible health effects, taking into account all new data.

13. Some delegations were of the view that Codex EMRLs for POPs were necessary for trade purposes and should be retained for some time because, due to persistence, they were still present in the environment and, as a consequence, in food, despite the fact that POPs were not used for plant protection anymore.

14. However, some delegations were of the view that there was possibly a need for revision of these EMRLs based on new monitoring data because their data indicate that levels of POPs were decreasing in foods.

15. After some discussion, the Committee agreed, by means of circular letter, to request monitoring data for POPs which fall under the Stockholm Convention and that are within the CCPR terms of reference, not only for commodities for which Codex EMRLs were established but also in other foods. Countries are requested to provide the monitoring data and additional information on methods of analysis using the GEMS/Food format.

16. The Committee also agreed to establish an Electronic Working Group chaired by India and co-chaired by Australia and New Zealand working in English only who, based on information received in response to the above CL, would prepare a paper containing proposals on how to deal with this issue for consideration by the next session of the Committee. The Committee requested this electronic working group to make a provisional evaluation of the monitoring data in order to make a more informed decision at the next session.

**Amendment to the Standard for Natural Mineral Waters (CODEX STAN 108-1991)**

17. The Committee noted that the 30th Session of the Commission agreed with the revision of the Standard for Natural Mineral Waters on the provisions for health-related substances in view of the completion of the revision of the WHO Guidelines for Drinking Water Quality which resulted in some discrepancies of the values of certain health related substances between the two documents[4]. The 31st Session of the Commission noted that the Standard did not indicate specific methods of analysis and sampling procedures for a number of chemical substances including pesticides and agreed to refer the issue to the relevant committees, including the Committee on Pesticide Residues[5].

18. The Committee had an exchange of views on how to approach this matter in relation to its mandate.

19. The WHO Representative informed the Committee that the WHO Guidelines described analytical methods for pesticide residues in drinking water and was of the view that the Committee could make reference to these methods.

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4 ALINORM 07/30/REP, paras. 164-167.

5 ALINORM 08/31/REP, paras. 106-108.

20. The Delegation of the European Community drew the attention of the Committee to its previous decision that a list of methods of analysis for pesticides would not be developed as a Codex document but would stay as a repository list on the IAEA website[6]. The Representative of IAEA expressed its support to expand the database on methods of analysis by collecting data on validated analytical methods for pesticide residues in natural mineral waters.

21. In view of the above considerations, the Committee noted that the WHO Guidelines for Drinking Water Quality contained guideline levels for pesticide residues and corresponding methods of analysis and agreed that, in view of its previous decision not to develop a list of methods of pesticide analysis in the Step Procedure, there was no need to develop a list of analytical methods for the determination of pesticide residues in natural mineral waters but that validated methods for natural mineral water should be maintained in the repository on the IAEA website. The Committee also agreed that information on validated analytical methods for the control of pesticide levels in natural mineral waters would be gathered through the issuance of a Circular Letter.

## REPORT ON ITEMS OF GENERAL CONSIDERATION BY THE 2008 JOINT FAO/WHO MEETINGS ON PESTICIDE RESIDUES (JMPR) (Agenda Item 4 (a))[7]

### 2.1 Comments from JMPR on a pilot process for JMPR to recommend maximum residue levels prior to national government registration

22. The Committee noted that considerations and recommendations by JMPR have already been taken into account in the paper on Globally Harmonized MRLs through Codex to be discussed under Agenda Item 8 and details would be discussed under this item.

### 2.2 Comments on the "Global Assessment" of chlorantraniliprole in terms of its usefulness as a work-sharing tool for JMPR

23. In order to continue efforts on work-sharing to preserve limited resources, a document on the pilot global assessment of chlorantraniliprole, conducted by several regulatory authorities under the auspice of OECD, was made available to JMPR. Only the toxicological assessment was available, the residue component of the global assessment was not available in time for the JMPR meeting.

24. The JMPR concluded that the global assessment of chlorantraniliprole was helpful for the preparation of the JMPR monograph on this pesticide and also made a number of recommendations to improve the usefulness of the global assessment documents for JMPR.

### 2.3 A process to ensure the scientific robustness and transparency of retrospective analyses of toxicity data on pesticide chemicals

25. Compilation and analysis of toxicity data on the hundreds of chemicals evaluated, so-called retrospective analyses are currently undertaken by several national and supra-national bodies to address specific questions such as the duration of studies in dogs as the basis for ADI, etc. In order to improve transparency and harmonization of these retrospective analysis OECD has formed a task group to develop guidance on this matter. This task group has asked JMPR to comment on how retrospective analysis of toxicity databases may improve the risk assessment of pesticides.

26. JMPR acknowledged the importance of retrospective analyses of toxicity databases and noted that JMPR could provide an independent international opinion on the scientific robustness and transparency of these analyses. JMPR recommended a pilot process and to liaise with the OECD task group to identify a suitable retrospective analysis.

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6 ALINORM 07/30/24, para. 164.

7 Section II, Pesticide Residues in Food 2008, Joint FAO/WHO Meeting on Pesticide Residues, Report 2008, FAO Plant Production and Protection Paper 193, Rome, 2009; and CRD 5 (comments from the European Community; the United States of America (CRD 8); and CRD 20 (CropLife International).

### 2.4 Comments on OECD guidance document for derivation of an acute reference dose

27. JMPR discussed a recent draft of the OECD guidance document for the derivation of an acute reference dose. This document is generally based on the JMPR guidance, which was developed for oral exposure. However, the OECD guidance also includes dermal and inhalation exposure. JMPR recommended that the OECD guidance document focus only on oral exposure, and that for dermal and inhalation exposure, which requires specific considerations, a separate document be developed. JMPR also recommended that the JMPR and OECD guidance on the setting of ARFDs would benefit from further detailed guidance, based on considerations already developed by several JMPR meetings.

### 2.5 Cumulative risk assessment for pesticide residues in food: Activities of the European Food Safety Authority

28. The JMPR will continue to monitor ongoing activities on cumulative risk assessment and advice on the need for cumulative risk assessment for certain groups of compounds.

### 2.6 Safety factors for Acute $C_{MAX}$-Dependent effects: Specific considerations with respect to carbamates such as carbofuran

29. In deriving health-based guidance values, such as ADI and ARfD, JMPR applies the paradigm developed by IPCS, in identifying the critical No-Observed Adverse-Effect-Level (NOAEL) and applying appropriate safety factors, also called uncertainty or adjustment factors. These factors allow for inter-species and inter-individual variations in toxicokinetis and toxicodynamic responses. In order to allow for integration of chemical-specific data, IPCS subsequently published guidance on subdividing the default factors to derive Chemical Specific Adjustment Factors (CSAF). JMPR applies this guidance and together with other published scientific considerations aims to develop chemical specific adjustment/uncertainty factors if data allow, instead of using default assumptions. This approach is applied to compounds where toxicological effects are dependant on peak exposures (Cmax) rather than total exposure (area-under-the-curve), and hence adjustments to default factors are justified. JMPR applies this approach to carbamates and specifically it was used for carbofuran at the 2008 meeting when it was concluded that there is strong scientific support to use a combined uncertainty factor of no more than 25 for carbofuran.

### 2.7 Transparency in the maximum residue level estimation process of the JMPR

30. The 40$^{th}$ Session of the Committee requested the JMPR to provide brief explanations of the derivation of each MRL estimate and to publish a calculation summary table in the JMPR report.

31. The Committee was informed that the JMPR had been using the NAFTA spreadsheet as a tool and not as the primary determinant of estimations, since NAFTA spreadsheet was not a statistical model for the accurate estimation of maximum residue levels but it was rather a decision-tree logic that utilized statistical calculations to arrive at a reasonable MRL that should be acceptable to different parties considering the same data set. The FAO JMPR Secretariat emphasized that the estimation was not a simple matter of entering the residue trial numbers into a spreadsheet and recording the output but that JMPR looked at both the numbers and the basis of those numbers and considered all relevant aspects in arriving at its MRL estimates.

32. In response to the CCPR request, a simple example was used to illustrate the process, but no number of examples could address all the situations encountered by the Meeting in reaching decisions on MRLs. The JMPR Meeting provided to the CCPR, on a trial basis, a concise form summarizing the derivation of MRLs from the 2008 Meeting.

33. The FAO JMPR Secretariat requested the Committee to review the forms, evaluate the usefulness of the information, and decide if they wish JMPR to include the information routinely in an Annex to the JMPR Report.

34. JMPR welcomed a harmonized statistical calculation method and agreed to use the 'OECD calculator for MRLs' as a trial in the 2009 evaluation, if this method was available for the upcoming JMPR meeting.

However, it was difficult for JMPR to provide a table to explain every recommended MRL, in particular at the testing stage of 'OECD calculator for MRLs'.

35. The Delegation of the USA indicated that the explanations contained in the table of 2008 JMPR Report were not sufficient because they did not explain the derivations of MRLs, but only why the NAFTA calculator was not used. The Delegation requested that a statistical calculation method be used as the first estimation of an MRL and the MRL recommended by the statistical procedure would be rejected only if it was clearly unreasonable. The Delegation indicated that there was a need to develop calculation procedures that all members could support and strive for a harmonized commodity grouping scheme because their analysis showed that those were two of the main reasons that different MRLs are derived from the same data set. The Delegation reiterated that it would be useful if JMPR could include a brief description on how the MRL was derived, when the calculator results are not used.

36. Other delegations stressed the importance of improving transparency of the MRLs establishment process and were of the view that a short explanation why one or the other decision was taken should be provided.

37. To the proposal that JMPR participate actively in the OECD work, the FAO JMPR Secretariat pointed out that JMPR was continually striving for the development and utilization of a statistical calculation method and that JMPR experts actively took part in the development of relevant OECD Guidelines, including the calculation method.

38. The Committee recommended that JMPR participate in the ongoing efforts of the OECD Residue Chemistry Expert Group and provide their input into the development of a revised statistical calculation method.

39. After some discussion it was recommended that for the 2009 JMPR meeting the OECD statistical calculation method would be used, if available, and if not available the NAFTA calculator method would continue to be used and reported and, to the extent possible, brief explanations of derivation of the MRLs would be provided when the calculator was not used.

40. The Committee noted the need for testing the "OECD calculator" for establishment of MRLs and suggested JMPR to test it when it became available.

41. Some delegations proposed to send a Circular letter requesting information on actual use by member countries of statistical calculation methods in establishing MRLs.

42. The Committee also noted that the 'OECD calculator for MRLs' is still in development and there were some questions regarding MRL setting policies which needed to be solved in order to finish this work.

43. The Committee noted that a questionnaire containing questions regarding these MRL setting policies had been distributed to OECD countries (CRD 20). Some delegations suggested that this questionnaire be distributed to all Codex Members in order to have more inclusiveness in the development of this calculator since OECD had limited participation and proposed that replies to this questionnaire could be evaluated by an electronic working group in order to prepare a paper for consideration by the next session of the Committee.

44. Other delegations questioned the usefulness of sending this questionnaire as the establishment of risk analysis policy was part of risk analysis and could be discussed on Agenda Item 9 while considering Risk Analysis Principles Applied by the CCPR.

45. After some discussion, the Committee agreed to send a circular letter containing questionnaire as presented in CRD 23 (modified version of CRD 20) with minor amendments. The Committee agreed to establish an electronic working group led by the United States and working in English only which would analyse replies and prepare a paper for consideration by the next session of the Committee.

**2.8 Nature of residue data populations and methods for combining residue trial data sets**

46. The Committee was informed that JMPR has recently been exploring the approach of combining data sets for estimation of MRLs, since about 50% of supervised trial data sets submitted to the JMPR contained

less than 10 residue values. The JMPR reemphasised that a sufficient number of trials is necessary for obtaining reliable estimates of the maximum residue levels and STMR values.

47. In order to decide whether data sets representing various national maximum GAPs can be combined or not, the nature of residue distributions in supervised trial data sets were examined and the large inevitable variability of the residues, especially in small data sets below 15-20 residue values, was demonstrated with practical examples.

48. The JMPR recommended that where a sufficient number of trials is available, reflecting the maximum GAP of one country or geographical region (maximum dosage at shortest PHI), the MRL estimates should be based on that residue data alone, however, where such a data base is limited and the combination of residue data reflecting different GAPs is considered, the distribution of residue data shall be carefully examined and only those datasets combined, which may be expected to arise from the same populations based on comparable GAP. The expert judgment could be assisted with appropriate statistical tests (e.g. Mann-Whitney U-test or Kruskal-Wallis H-test).

49. The Delegation of Japan supported the JMPR principles in data combination and in using statistical calculations for MRL estimation in accordance with those principles.

**2.9 Evaluation for follow crops**

50. The Committee was informed that the 2008 JMPR reviewed information about regulation of residues in follow crops provided by Australia, the EU, Japan and the United States. The JMPR recognized that neither approach is applicable for the JMPR, since label restrictions are limited to national authorisations and MRLs for "other plant commodities" are currently not supported by the Codex classification system for foods and animal feeds.

51. The Committee was informed that for an estimation of possible residues in follow crops, the JMPR must rely on the information provided and that the JMPR made recommendations on its evaluation for follow crops.

**2.10 Selection of representative commodities when establishing commodity group MRLs**

52. The JMPR noted that the selection of representative crops and corresponding commodities for particular crop and commodity groups would be very valuable to those planning residue trials.

53. The Committee was informed that JMPR evaluates available data, whether on a 'representative' commodity or not. In estimating a group MRL, JMPR includes available data, if valid and sufficient, from all commodities whether potentially representative or not.

54. The JMPR looked forward to further progress with commodity grouping and representative commodities. Careful attention to grouping will assist the JMPR in proposing group MRLs more often.

**2.11 Proportionality of pesticide residue concentrations and application rates in supervised trials**

55. The Committee was informed that research work and side-by-side trials on 'proportionality' were initiated in some countries.

56. The JMPR recommended that before the results of such work can be applied to residue evaluation, it is important to examine the conditions where proportionality is valid and where it is not. Where proportionality is valid, the residues from trials other than the GAP rate could be adjusted to values equivalent to the GAP rate.

57. The Committee noted that publication of the relevant information is needed as a basis for JMPR and national authorities to make more use of non-GAP rate trials in residue evaluation.

## REPORT ON 2008 JMPR RESPONSES TO SPECIFIC CONCERNS RAISED BY CCPR (Agenda Item 4b)[8]

58. The Committee noted that specific concerns raised by CCPR at its last meeting will be considered when discussing the relevant chemicals under Agenda Item 5.

59. The Committee expressed its appreciation to JMPR for their work and pointed out that the work of JMPR was essential for this Committee.

## DRAFT AND PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES IN FOOD AND FEEDS AT STEP 7 AND 4 (AGENDA ITEM 5) [9]

### GENERAL REMARKS

60. The Committee noted that when new draft MRLs were advanced to Step 5/8 or to step 8 for a commodity or group of commodities, and adopted by the Commission, any existing CXLs or draft or proposed draft MRLs for the related commodities would be revoked.

### CAPTAN (007)

61. The Committee decided to recommend revocation of the temporary CXLs for apple and pear, because they had been replaced by the CXL for pome fruits. The Committee also decided to recommend revocation of the CXL for peach at 15mg/kg, as the new CXL for peach at 20mg/kg had been adopted by Commission.

### CARBARYL (008)

62. The Committee decided to withdraw the draft MRL for stone fruits (except cherries) and to recommend the revocation of the temporary CXLs for apricot; nectarine and peach for acute dietary intake reasons, and to return the draft MRL for cherries to Step 6 as new data will be submitted to JMPR.

63. The Committee also decided to recommend revocation of the temporary CXLs for peppers (which had been replaced by the CXL for peppers, Sweet, and Pepper, Chilli) and for pear as recommended by JMPR.

64. The Committee decided to advance the draft MRL for citrus fruit for adoption at Step 8, noting the reservation expressed by the EC and Norway due to their intake concerns.

65. The Committee decided to recommend revocation of the CXL for grapes and to withdraw the draft MRLs for citrus pulp, dry; dried grapes (=currants, raisins and sultanas); grape juice; grape pomace, dry; and grapes due to acute dietary intake concerns, and to withdraw the draft MRL for citrus juice, as residues don't concentrate in the juice.

### DICOFOL (026)

66. The Committee noted that new data for supporting the existing CXL for tea, green, black will be submitted by India and Morocco for JMPR evaluation. The JMPR secretariat informed the Committee that dicofol toxicological evaluation was rather old and there is a need for a review hence submission of toxicological data is also necessary. The Delegation of India indicated that they will contact the Indian manufacturer and encourage the submission of toxicological data.

67. The Committee noted that dicofol was scheduled for evaluation in 2011 but that the manufacturer was no longer supporting this compound.

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[8] Section III, Pesticide Residues in Food 2008, Joint FAO/WHO Meeting on Pesticide Residues, Report 2008, FAO Plant Production and Protection Paper 193, Rome, 2009.

[9] CX/PR 09/41/03; CL 2008/39-PR; CX/PR 09/41/03-Add.1; CRD 3 (Australia); CRD 4 (Kenya); CRD 9 (EC); CRD11 (Thailand); CRD 12 (Mali); CRD17 (China); CRD 21(Korea).

**DIMETHOATE (027)**

68. The Committee, noting the reservation expressed by the EC and Norway on the MRLs for lettuce, head and peppers, sweet due to their intake concerns, decided to advance the proposed draft MRLs for chilli peppers (dry); lettuce, head (at 0.3mg/kg); and peppers, sweet (at 0.5mg/kg) for adoption at Step 5/8 and recommended revocation of the CXL for lettuce, peppers, due to intake concerns.

**DIPHENYLAMINE (030)**

69. The Committee decided to advance the proposed draft MRLs for milk fats and milks for adoption at Step 5/8.

**ETHOXYQUIN (035)**

70. The Committee decided to advance the proposed draft MRL for pear for adoption at Step 5/8.

**MALATHION (049)**

71. The Committee decided to advance the proposed draft MRLs for wheat and wheat bran, unprocessed for adoption at Step 5/8, noting the reservation expressed by the EC and Norway on wheat due to their intake concerns. The Committee decided to recommend revocation of the existing CXL for wheat flour, as residues do not concentrate in wheat flour.

72. The Committee was advised that the CXLs for apples, grapes and citrus were based on European GAP which no longer existed. The Committee agreed that these CXLs would be considered for revocation at the next meeting (*see* paras 78 and 202).

**MEVINPHOS (053)**

73. The Committee decided to recommend revocation of the CXL for Cabbages, Head because new supporting data was not available.

**PARAQUAT (057)**

74. The Committee recalled that the 38th session of the Committee had decided to retain CXL for rice for four years under the periodic review procedure at the request of the Delegation of Thailand, and noted that paraquat was scheduled for evaluation by JMPR in 2009.

75. The Committee decided to maintain the CXL for rice, awaiting the outcome of the 2009 JMPR evaluation.

**DICHLOFLUANID (082) (information only)**

76. The Committee was informed by the Delegation of Australia, speaking as the Chair of the working group on priorities, that dichlofluanid was listed in the tentative schedule for 2013 JMPR evaluation, although this compound was no longer supported by the manufacturer.

**CHLORPYRIFOS-METHYL (090)**

77. The Committee agreed to retairn the draft MRLs for barley; oats and rice to Step 7, awaiting the 2009 JMPR evaluation.

**METHOMYL (094)**

78. The Committee noted the acute dietary intake concerns expressed by the EC and Norway for grape and tomato, based on the EC Acute Reference Dose established. The Delegation of the EC informed the Committee that they would submit a concern form for apple.

79. The Committee agreed to advance the proposed draft MRL for apple to Step 5 and the draft MRLs for fruiting vegetables, cucurbits; grapes; lettuce, head; lettuce, leaf; pear and tomato to Step 5/8, noting the reservation of the EC and Norway on the MRLs for grape and tomato.

80. Since no new data were submitted to 2008 JMPR, the Committee decided to withdraw the draft MRLs for brassica (cole or cabbage) vegetables, head cabbages, flowerhead brassicas and celery and to recommend revocation of the CXLs for cabbages, head; cauliflower and celery because of acute dietary intake concerns.

81. The Committee also agreed to recommend revocation of the CXL for pea vines (green), in line with its policy of not recommending CXLs for fresh animal forage commodities.

**ACEPHATE(095)**

82. The Committee decided to withdraw the draft MRLs for flowerhead brassicas; mandarin; nectarine; peach; pepper and pome fruit due to no new data available to support alternative GAPs, and decided to recommend the revocation the existing CXLs for broccoli and cauliflower as recommended by 2003 JMPR.

**CARBOFURAN(096)**

83. The Committee decided to withdraw the draft MRLs for cantaloupe; cucumber; potato; squash, summer and sweet corn (corn-on-the-cob) due to no new data available to resolve dietary intake concerns, and to retain the draft MRLs for mandarin and orange, sweet, sour at Step 7 awaiting 2009 JMPR dietary intake estimation.

84. The Committee also decided to recommend revocation of the CXL for potato and milk because of dietary intake concerns.

85. The Committee noted the concern form submitted by EC relating to the use of different ARfDs and agreed to reconsider the CXLs for banana; edible offal; maize; meat; milks; rice, husked; sugar beet; sugar cane and sunflower seed for the further discussion next year based on the JMPR response.

**METHAMIDOPHOS(100)**

86. The Committee decided to withdraw the proposed draft MRLs for flowerhead brassicas; mandarins; nectarine; peach; peppers and pome fruits, and also decided to recommend the revocation the CXLs for cauliflower; peppers, chili and peppers, sweet because of dietary intake concerns as recommended by 2003 JMPR.

**PHOSMET(103)**

87. The Committee decided to recommend the revocation of the CXLs for apple and pear because they had been replaced by the CXL for pome fruits as recommended by 2003 JMPR.

**DITHIOCARBAMATES(105)**

88. The Committee decided to recommend the revocation the CXL for apple because this had been replaced by the CXL for pome fruits as recommended by 2004 JMPR.

**PHORATE (112)**

89. The Committee decided to retain the draft MRL for potato at step 7, awaiting the 2009 JMPR evaluation and to recommend deletion of the CXL for wheat as recommended by the 2005 JMPR, as no new data are available.

**CYPERMETHRINS (INCLUDING ALPHA- AND ZETA CYPERMETHRIN) (118)**

90. The Committee decided to advance the draft MRLs for all commodities except asparagus for adoption at Step 5/8, noting the EU and Norway reservations on the MRLs for cauliflower; scarole (broad-leaf); apple (covered by pome fruits) and peach (covered by stone fruits) because of their acute intake concerns.

91. The Committee decided to advance the proposed draft MRL for asparagus for adoption at Step 5, noting that data will be submitted by Thailand for evaluation by the 2011 JMPR.

92. The Committee decided to retain the CXL for citrus fruits for four years under the Periodic Review Procedure, noting that data will be submitted by Thailand for evaluation by the 2011 JMPR.

93. The Committee decided to retain the CXLs tea, green, black for four years under the Periodic Review Procedure, noting that China and India will submit data for evaluation by the 2011 JMPR.

94. The Committee agreed to recommend revocation of the CXL for mushrooms as there was insufficient data for JMPR to consider an alternative GAP; revocation of the CXL for berries and other small fruits as this was being replaced by a new level for strawberry and revocation of the CXL for vegetable oils, as this was being replaced by a new level for refined and virgin olive oils.

**OXAMYL (126)**

95. The Committee noted that 2008 JMPR could not recommend MRLs based on alternative GAP as the new data were residues of the parent compound only while the current residue definition included the Oxime metabolite.

96. The Committee agreed to retain all CXLs and draft MRLs at step 7 awaiting a review of the residue definition and analytical methods by JMPR.

**DIFLUBENZURON (130)**

97. The Committee noted that the CXLs for apple and pear had been revoked in 2004 because they had been replaced by a CXL for pome fruits as recommended by 2002 JMPR.

**TRIADIMEFON (133)**

98. The Committee agreed to retain the draft MRL for grapes at Step 7 due to intake concerns expressed by the EC and await to the outcome of 2009 JMPR evaluation.

99. The Committee decided to advance the draft MRLs for banana; fruiting vegetables other than cucurbits and fruiting vegetables, cucurbits for adoption at Step 8.

**PROCHLORAZ (142)**

100. The Committee decided to retain the draft MRL for mushroom at Step 7, awaiting the outcome of 2009 JMPR evaluation of an alternative GAP to resolve the dietary intake concern.

**TRIAZOPHOS (143)**

101. The Committee decided to retain the MRL for soya bean (immature seeds) at Step 7 awaiting further data from Thailand on edible portion residues. The Committee decided to retain the CXL for cereal grains for four years under the Periodic Review Procedure noting that the data will be submitted by China for 2010 JMPR evaluation.

**CARBOSULFAN (145)**

102. The Committee decided to retain the draft MRLs for mandarin and oranges, sweet, sour, to withdraw the draft MRL for potato and to recommend revocation of the CXL for milks in line with the decision made for Carbofuran.

**CYHALOTHRIN (INCLUDES LAMBDA-CYHALOTHRIN) (146)**

103. The WHO JMPR Secretariat informed the Committee that JMPR at the 2008 meeting had considered the concerns raised by the EC regarding the use of different safety factors when deriving the ADI and the use of a different end point to derive the ARfD and that details were described in Section 3 of the report.

104. The Committee decided to advance all the proposed draft MRLs to Step 5/8, noting the reservation of the EC and Norway on apricot; peaches; nectarines; tomatoes; peppers, sweet corn, broccoli; cauliflower; cabbage, heads and milk due to acute intake concerns.

105. The Committee decided to recommend revocation of the CXLs for cotton seed; cotton seed oil, crude; cotton seed oil, edible and potato.

**CYFUTHRIN (157)**

106. The Committee decided to return the draft MRLs for broccoli and cabbages, Head to Step 6 and to consider their withdrawal at its next session if no data for an alternative GAP would be available by then.

107. The Committee agreed to delete the CXL of 2 mg/kg for chilli peppers (dry), which was replaced by the CXL of 1 mg/kg for the same commodity.

**FLUSILAZOLE (165)**

108. The WHO JMPR Secretariat informed the Committee that JMPR at the 2008 meeting considered the concerns raised by the EC regarding differences in ARfD set by the EC and JMPR and those details were described in Section 3 of the report.

109. The Committee decided to advance the draft MRLs for edible offal (mammalian); nectarine; peach and pome fruits to Step 8, noting the reservation of the EC and Norway regarding their intake concerns for apple; peach and edible offal.

110. The Committee decided to recommend revocation of the CXL for cattle, edible offal of, as recommended by 2007 JMPR.

**TRIADIMENOL (168)**

111. In line with the decisions taken for triadimefon (133), the Committee decided to advance the draft MRLs for banana; dried grapes (= currants, raisins and sultanas); fruiting vegetables other than cucurbits and fruiting vegetables, cucurbits to Step 8 and to retain the draft MRL for grape at Step 7, awaiting 2009 JMPR evaluation.

**PROFENOFOS (171)**

112. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8.

113. The Committee decided to recommend revocation of the CXLs for cabbages, head; peppers, sweet and potato, as recommended by 2008 JMPR, and the CXL for cotton seed oil, edible as residues do not concentrate during processing.

114. The Committee agreed to retain the CXLs for peppers, chilli and chilli peppers (dry) for four year under the periodic review procedure, noting that the Delegation of Thailand would submit data to support those commodities.

**BUPROFEZIN (173)**

115. The Committee decided to advance all the proposed draft MRLs to Step 5/8 and to recommend revocation of the CXL for oranges, sweet, sour, as recommended by 2008 JMPR.

**TEBUCONAZOLE (189)**

116. The Committee decided to advance the artichoke, Globe; barley; barley straw and fodder, dry; brassica; carrot; common bean; edible offal; elderberry; garlic; leek; lettuce, head; maize; mango; melons, except watermelon; onion, bulb; papaya; peanut; plums (except prunes); pome fruits; prunes; rice; Soya bean (dry); sweet corn; tomato and watermelon to step 5 due to the concern expressed by the EC that no short term dietary intake had been estimated, and decided to advance the coffee bean; coffee bean roasted; eggs; hops, dry; meat; milks; poultry meat; poultry, edible offal of and rape seed to Step 5/8.

**FENPYROXIMATE (193)**

117. The Committee decided to maintain the MRL for grapes at Step 7 awaiting the review of alternative GAP by JMPR in 2010.

**HALOXYFOP (194)**

118. The Committee decided to retain all the draft MRLs at Step 4 and Step 7 awaiting the review by JMPR 2009 evaluation.

**CHLORPROPHAM (201)**

119. The Committee decided to advance the proposed MRLs for milk fats and milks to Step 5/8.

**ESFENVALERATE (204)**

120. The Committee agreed to retain the draft MRLs for cotton seed, tomato and wheat at Step 7 awaiting the phase-out of fenvalerate.

**IMIDACLOPRID (206)**

121. The Committee decided to advance all proposed MRLs for adoption at Step 5/8.

**METALAXYL-M (212)**

122. The Committee agreed to retain all the draft MRLs at Step 7, awaiting the periodic review by JMPR for both toxicology and residues in 2013.

**BIFENAZATE (219)**

123. The Committee noted that an incomplete data submission precluded the estimation of MRL or STMR values for additional commodities in 2008 JMPR, and was informed by the delegation of Australia that the manufacturer will submit additional data for the 2010 JMPR evaluation.

**BOSCALID (221)**

124. The Committee decided to advance the proposed draft MRLs for banana and kiwi to Step 5 noting the concern expressed by the EC that no long term dietary intake had been estimated. The JMPR Secretariat clarified that it appears that incomplete rotational crop data had been submitted, and that JMPR will re-consider all data at the 2009 JMPR with the aim to finalize the dietary risk assessment.

**AZOXYSTROBIN (229)**

125. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8.

**CHLORANTRANILIPROLE (230)**

126. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8, noting that USA had submitted a concern form relating to the evaluation of MRLs for Grapes and Leafy Vegetable by JMPR. The JMPR agreed to provide a more detailed explanation of the basis of these MRLs at the next meeting.

**MANDIPROPAMID (231)**

127. The Committee decided to advance all proposed draft MRLs for adoption Step 5/8.

**PROTHIOCONAZOLE (232)**

128. The Committee decided to withdraw the proposed draft MRL for wheat flour because residues do not concentrate during processing, and advance all the remaining proposed draft MRLs for adoption at Step 5/8, noting that USA had submitted a concern form relating to the exclusion of field trials data reporting only total residues rather than parent and metabolite residues separately. The JMPR agreed to reconsider the data previously submitted and the manufacturer agreed to supply available data on the various residues components. The Delegation of the USA requested that the response from JMPR include a complete discussion of the issues for consideration by the Committee.

**SPINETORAM (233)**

129. The Committee decided to advance all proposed draft MRLs for adoption at Step 5/8.

**SPIROTETRAMAT (234)**

130. The Committee decided to advance all proposed draft MRLs for adoption at Step 5/8, noting that the USA concern form relating to the MRL evaluation had been addressed.

**PROPOSED DRAFT REVISION OF THE CODEX CLASSIFICATION OF FOODS AND ANIMAL FEEDS (Agenda Item 6)[10]**

131. The Committee recalled that at its last session it had agreed to return the Proposed Draft Revision to Step 2 and to establish the electronic working group, led by the Netherlands and the United States of America, to continue the revision of the Classification according to the agreed timetable, including the redrafting of the commodity groups for "Bulb Vegetables" and "Fruiting Vegetables, Other than Cucurbits", taking into account the comments presented at the session; the redrafting of the commodity groups for "Berries and Small Fruits" and "Edible Fungi"; and the revision of the coding system.

132. The Delegation of the Netherlands introduced the Proposed Draft Revision and highlighted the content and changes presented in the document. The Committee expressed its appreciations for the excellent work of the Electronic Working Group and noted the proposals for the revision of the coding system and the revision of the classification of eight commodity groups, namely, Bulb vegetables, Fruiting vegetables, other than Cucurbits, Berries and small fruits, Edible fungi, Citrus fruits, Pome fruits, Stone fruits and Oilseeds.

***Coding System***

133. The Committee agreed with the proposal of the electronic Working Group to:

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[10] CX/PR 09/41/4; CX/PR 09/41/4-Add.1 (comments of Costa Rica and the Republic of Korea); CRD 4 (Kenya); CRD 5 (European Community); CRD 6 (Morocco); CRD 11 (Thailand); CRD 15 (South Africa); CRD 18 (Indonesia); CRD 22 (Revised proposed revision of the Codex Classification of Foods and Animals prepared by the Netherlands).

- retain the current coding system;

- add only codes for new commodity groups and commodities (2000-2199 for new commodity (sub) groups and 2200 to 4000 for new commodities); and

- remove the codes from 4000 to 5000 for synonyms, while maintaining the synonyms in the classification for easy reference.

134. The Committee further agreed that the codes presented in Annex 2 to CX/PR 09/41/4 would be used for new commodities and commodity (sub) groups in the Revised Classification, noting that relevant codes would be assigned to subgroups under 027 Herbs and 028 Spices.

***Draft Proposals for Commodity Groups***

135. The Committee noted that comments contained in the working document CX/PR 09/41/4-Add.1 and Conference Room Documents had been reflected in the revised proposal prepared by the Netherlands (CRD 22) and agreed to base its discussion on CRD 22. The Committee generally supported the revised proposal and made the following decisions and observations.

Fruiting vegetables, other than Cucurbits

136. The Committee noted that Okra and Roselle were placed under 12B Peppers and that Pepino was included under 12C Egg plants although they were not actually belonging to these groups and considered whether they should be placed under a new subgroup.

137. The Delegation of the United States of America, speaking as the co-chairperson of the Electronic Working Group, explained that Okra was placed under the Peppers subgroup because of the similar morphology, pesticide use pattern and residues. The Delegation further indicated that these commodities were minor crops and their proposed placement would facilitate the establishment of MRLs for these commodities and did not support the proposal to move them to a new subgroup. This view was supported by some delegations.

138. Other delegations noted that the extrapolation of pesticide residues for the establishment of MRLs would best be considered when discussing the document on Draft Principles and Guidelines on the Selection of Representative Commodities for Extrapolation of MRLs to Commodity Groups.

139. The Codex Secretariat reminded the Committee that "the Classification is intended to be as complete a listing of food commodities in trade as possible, classified into groups on the basis of the commodity's similar potential for pesticide residues" and that "the Codex Classification is intended to promote harmonisation of the terms used to describe commodities which are subject to maximum residue limits and of the approach to grouping commodities with similar potential for residue for which a common group maximum residue limit can be set"[11].

140. After some discussion, the Committee agreed to place Okra, Roselle and Pepino in square brackets for further consideration. The Committee further agreed that, as a matter of principle, the introduction of a subgroup covering other commodities, should be considered whenever absolutely necessary, because this would allow the inclusion of commodities which were not easily placed under relevant specific subgroups in each group. It was also noted that a similar approach had already been taken in the Proposed Draft Revision, for example, "subgroup 023D Other oilseeds".

Pome fruits

141. The Committee agreed to place Azarole, Mayhaw and Tejocote in square brackets for further consideration, taking into account the proposal of the European Community to include them in Berries and other small fruits.

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[11] Foreword to the Codex Classification of Foods and Animal Feeds (CAC/MISC 4).

Stone fruits

142. In response to the question of one delegation, it was clarified that Cherries, Plums and Peaches should be separated into different subgroups because of their different morphology (size of fruits and existence of short hairs on the fruit skin), pre-harvest intervals and resultant residue levels.

Oil seeds

143. The Committee agreed to place Linseed, Poppy seed and Sesame seed under 023A Rape seeds subgroup in square brackets for further consideration, because they did not belong to rape seeds.

144. The Committee noted the proposal of the European Community to create an entry for olives used for oil production under Oil fruits and to have a separate entry for table olives in another group for miscellaneous fruits. However, having been unable to identify the relevant group for table olive, the Committee agreed to ask the Electronic Working Group to prepare proposals on where and how olives should be located.

145. To the question why Hempseed was included in the Classification, the Committee noted that Hempseed was traded internationally either for the production of hempseed oil or as a spice and that MRLs were established in some countries and therefore agreed to retain the proposed classification. The Delegation of Uganda expressed its reservation on this decision because both the seeds and leaves of hemps were prohibited for trade in their national legislation.

**Status of the Proposed Draft Revision of the Codex Classification of Foods and Animal Feeds**

146. The Committee agreed to forward to the Commission the Proposed Draft Revision of the Classification for the eight commodity groups for adoption at Step 5 (*see* Appendix IX). The Committee further agreed to re-establish the electronic working group led by the Netherlands and the United States of America, which would consider the unresolved issues in commodity groups of Fruiting vegetables, other than cucurbits (*see* para. 140), Pome fruits (*see* para 141) and Oil seeds (*see* paras 143 and 144) and prepare new draft proposals for other commodity groups according to the schedule earlier agreed to by the Committee.

## PROPOSED DRAFT PRINCIPLES AND GUIDANCE FOR THE SELECTION OF REPRESENTATIVES COMMODITIES FOR THE EXTRAPOLATION OF MRLS TO COMMODITY GROUPS[12]

147. The 40th Session of the Committee agreed that principles and guidance on the selection of representative crops for the extrapolation of MRLs to commodity groups should be considered by the electronic Working Group on the Revision of the Classification of Foods and Animal Feeds but as a separate document in order to facilitate its consideration at the next session of the Committee[13].

148. The Delegation of the United States of America introduced the document highlighting the main issues associated with the extrapolation of MRLs to commodity groups. The Delegation recalled the objectives of the document and introduced the proposed principles by which representative commodities should be: the major item in terms of production and consumption, likely to contain the highest residues and similar in morphology, growth habit, similar pest problems and edible portion to the related commodity within a group or subgroup. In addition, group MRLs should be based on similar GAPs. Based on these principles, information on the rationale for the selection of representative commodities was provided in Addendum 1 to CX/PR 09/41/6-Add.2 using as an example the Group 009 Bulb Vegetables.

149. The Delegation further explained that proposals on representative commodities should be provided in parallel with the respective commodity grouping revisions and that JMPR should be advised to use the representative crops adopted by the Commission and, on a case by case basis, use other representative commodities (including those which might be specifically requested by Codex members). In addition, the

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12 CX/PR 09/41/6-Add.2. Comments from the United States of America (CRD 7); Thailand (CRD 11) and Japan (CRD 19).

13 ALINORM 08/31/24, paras. 113-115.

Delegation proposed that JMPR should be requested to provide the Committee with justification for the use of any alternative representative commodities.

150. The Delegation invited the Committee to adopt the framework for the selection of representative commodities, principles and guidance and to consider moving "Crop Types" forward as they were completed, e.g. fruits, vegetables, herbs and spices.

151. The Delegation of Japan indicated that, in order to make the document more useful and user-friendly, the draft principles and guidance should be re-structured in a similar way as other related Codex texts e.g. having sections on introduction, scope, definitions, general principles, application, etc. The Delegation also noted that additional information for guidance on the selection of representative commodities for extrapolations should be included, taking into account the work done by the OECD, JMPR, etc. Furthermore, there might be a need to prioritize the criteria as it might be difficult for a given commodity to comply with all of them. Moreover, information on individual commodities should be examined before deciding if a candidate commodity could quality as a representative commodity for the setting of a global MRL as they might vary across regions depending on production and consumption patterns, climatic conditions, etc. The Delegation further noted that, after adoption of the principles and guidance by the Commission, each country could select representative commodities in accordance with these principles and guidance and provide this information to the Committee as the basis for their inclusion as alternative representative commodities at the international level. This view was supported by some delegations.

152. A number of delegations supported the principles and guidance as presented in Addendum 1 to CX/PR 09/41/6. Some of these delegations presented comments for clarification or enhancement of the document, for instance, the possibility to include other alternative representative commodities that better matched the criteria in their regions e.g. leeks rather than green onions. It was noted that by applying the principles spring onions represented the major item for production worldwide, tended to show the highest residues and presented a number of similarities in terms of morphology, cultivation, phytosanitary treatments, etc. in the subgroup, however, other alternative representative commodities could also be selected to accommodate Codex members needs when appropriate. It was also noted that the principle on the production and consumption should be further described in order to facilitate its implementation and to this purpose it might be better to refer to "production and/or consumption".

153. It was also suggested that, in determining representative commodities "similar/same residue" needed to be defined and justification was needed on why the selected commodities were considered to be representative. In addition, it would be useful to demonstrate how the principles were applied to each of the revised commodity groups. It was further noted that representative commodities should be selected based on real data showing similarity of residues and not on extrapolated data (group MRLs) as indicated in the different combinations of commodity/chemicals in Table 5 of CX/PR 09/41/6-Add.2.

154. In view of the above considerations, the Committee agreed that representative commodities within each Codex Classification commodity group would be selected and proposed, based on consideration of all available information and using the following principles: A representative commodity should be major in terms of production and consumption, should be likely to contain the highest residues and should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup while assuming that group MRLs would be based on similar GAPs. The Committee also agreed that alternative representative commodities might be selected to reflect regional differences in dietary consumption and/or areas of production for certain commodities. In addition, proposals on representative commodities would also be provided in parallel with the respective commodity grouping.

**Status of the Proposed Draft Principles and Guidance for the Selection of Representative Commodities for the Extrapolation of MRLs to Commodity Groups**

155. The Committee agreed to return the proposed draft Principles and Guidance to Step 2 for redrafting by the Delegation of the United States of America in order to take account of the comments and decisions made at this session and to present a revised version for circulation, comments and consideration at its next session.

## PROPOSED DRAFT REVISION OF THE GUIDELINES ON THE ESTIMATION OF UNCERTAINTY OF RESULTS FOR THE DETERMINATION OF PESTICIDE RESIDUES (Agenda Item 7)[14]

156. The 40th Session of the Committee agreed to propose new work on the revision of the Guidelines on the Estimation of Uncertainty of Results (CAC/GL 59-2006) and the 31st Session of the Commission concurred with this proposal.[15]

157. The Representative of IAEA, as Chair of the in-session Working Group on Methods of Analysis, introduced a revised version of the Guidelines and outlined the major issues associated with the revision of the text including conclusions and recommendations as indicated in CRD 24. Several delegations supported the revised version while requesting the inclusion of more examples of measurement uncertainty (MU) calculations to facilitate understanding by laboratory practitioners in addition to those already provided on proficiency testing schemes. It was also noted that the revision should be consistent with the general relevant texts currently being developed by the Committee on Methods of Analysis and Sampling.

158. The Representative of IAEA also referred to the discussion that took place on the evaluation of distribution of pesticide residues after primary process in citrus fruits, pome fruits, oilseeds and wine grapes as summarized in CRD 24 (see also Agenda Item 11(ii)). The Delegation of the European Community informed the Committee that it would prepare a discussion paper on the use of Kow (n-octanol-water partition coefficient) for processing factors for consideration by the next session of the Committee.

159. The Committee noted that the revised document was intended to be incorporated as an Annex to the Guidelines.

### Status of the Proposed Draft Revision to the Guidelines on the Estimation of Uncertainty of Results for the determination of Pesticides

160. The Committee agreed to return the proposed draft Guidelines to Step 3 for circulation, comments and consideration by an electronic Working Group under the coordination of the IAEA, open to all Codex Members and Observers and working in English only, which would prepare a revised version for consideration by the next session of the Committee (Appendix X).

161. The Committee agreed to re-establish a working group during its next session, chaired by the IAEA.

## ACHIEVING GLOBALLY HARMONIZED MRLS THROUGH CODEX (Agenda Item 8)[16]

162. The Committee recalled that the 40th Session it had agreed to establish an electronic working group led by the United States to prepare a discussion paper describing in more detail the proposed pilot process for JMPR recommendation of MRLs before national or regional authorities, for consideration by this session of the Committee.

163. The Delegation of the USA introduced the document which described the proposed pilot process The Delegation indicated that the idea for this pilot project had come from the Global Minor Use Summit and noted that the discussion paper explained in detail the proposed process, advantages and disadvantages of such a process emphasizing that it would provide JMPR recommended MRLs before national/regional authorities registration occurs and this would facilitate global harmonization with Codex MRLs. The Delegation indicated that it was expected that the advantages of such a process would outweigh the disadvantages and emphasized that the outcome of the pilot project would help CCPR and JMPR to make an informed determination on whether to progress the concept of parallel evaluations, hopefully leading to greater harmonization of MRLs. The Delegation also pointed out that no government or other authority would give up its independent rights for pesticide registration and that the JMPR would remain an independent scientific body following its governing requirements and meeting its responsibilities.

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14 CX/PR 09/41/5; CX/PR 09/41/5-Add.1; CRD 4 (Kenya); CRD 12 (Mali); CRD 14 (Argentina); CRD 17 (China); CRD 18 (Indonesia); and CRD 24 (Report of the in-session Working Group on Methods of Analysis).

15 ALINORM 08/31/24, paras. 118-123.

16 CX/PR 09/41/6; CRD 12 (Mali); CRD 15 (South Africa).

164. The JMPR Secretariat informed the Committee that JMPR was in support of this initiative to enhance global harmonization of MRLs. JMPR supports the proposal of a pilot project since only through practical experience can all potential issues be identified in particular for residue evaluation. The JMPR Secretariat noted that if there was no firm commitment by the Committee for this pilot project, then JMPR would not have time to evaluate the pilot compound at the 2009 Meeting because there would not be sufficient time after the Commission meeting in July 2009.

165. Some delegations while supporting the concept of the pilot project, drew the attention of the Committee to the fact that it was an exceptional case which would not be done according to the usual procedure and that the Committee should consider very carefully the outcome of this pilot project, especially what to do with the proposed MRLs recommended by JMPR based on proposed GAPs which could have changed following the JMPR evaluation.

166. The Delegation of Australia drew the attention of the Committee to the fact that the Committee had significantly streamlined its working procedures during the last several years and indicated that the current CCPR procedures, especially use of the rapid Step 5/8, were timely and efficient. The Delegation supported the concept of the pilot but considered that fluopyram was not the most appropriate candidate and that a more complicated insecticide, having different GAPs from various regions, should be selected as a better example, alternatively the delegation proposed that the pilot project could be done for the JMPR toxicology evaluation only. These views were supported by some delegations.

167. The Delegation of the European Community also noted the improved speed of the work of the Committee and indicated that it was willing to consider other feasible ways to improve the Committee's work. The Delegation expressed doubts about the added value of this pilot project and drew the attention of the Committee to the fact that OECD and JMPR work sharing might be helpful in this regard. The Delegation of the EC stated that it would agree to move forward under the condition that this will be limited to low-risk substances, for which MRLs are proposed for a wide variety of crops used world wide, and that the outcome of the project should be thoroughly evaluated.

168. Many delegations, including a significant number of developing countries, supported the proposal to initiate a pilot project to gain experience from its application, in order to possibly implement a new procedure that would further efforts to as much as possible harmonize MRLs. A number of developing countries emphasized that due to limited capacity and resources, they were unable to conduct independent risk assessments and are faced with often widely varying MRLs which cause issues for determining safety and for trade; therefore all efforts to improve harmonization should be encouraged.

169. The JMPR Secretariat suggested that due to limited resources JMPR may only be able to evaluate 3-5 commodities for the pilot compound in 2009. Some delegations were of the view that in order to gain an experience and evaluate the usefulness of the pilot project, the JMPR should consider as many commodities as possible; however no agreement was reached on this matter.

170. The Committee noted that the central issue for the pilot project was that the work of JMPR would be based on the proposed labels and GAPs, rather than registered labels. The Joint FAO JMPR Secretary drew the attention of the Committee to the fact that successful completion of an evaluation by JMPR required registered label information, including GAP, for the estimation of MRLs and reminded that GAPs for a pesticide mean more than just the maximum proposed use pattern as described by the 2008 JMPR.

171. The Joint WHO Secretary for JMPR emphasized that while the pilot project was not in accordance with existing procedure, i.e. only proposed but not yet registered GAPs, it could be done on an exceptional basis to identify issues for such a process. If GAPs change significantly after evaluation by JMPR then MRL proposals were not valid. However, only a pilot process can really address such issues in practice.

172. The Delegation of the USA noted that while this presents the possibility that the GAP may change, it is necessary in order to realise the two central benefits of the proposed process; for registration authorities to have the benefit of knowing the JMPR recommended MRLs before they set their own MRLs and to allow JMPR to work in parallel with the global joint review teams rather than following along after their assessments are completed, both of which may be expected to aid in harmonization of MRLs in the future.

173. The Delegation further noted that issue of the GAP possibly changing was addressed in the discussion paper. First, it would be necessary to document for the CCPR that the GAP which was evaluated by the JMPR was the GAP that was registered and only those MRLs would be eligible for advancement. Second, it was acknowledged that some GAPs would change and for those the JMPR would have to do some re-evaluation of the residue side.

174. The Delegation of the USA drew the attention of the Committee to the fact that the pilot project provides an opportunity for doing the work in a new way, that is expected to promote harmonization, that the discussion paper addressed the questions that were being raised in relation to the pilot project; that doing a pilot on fluopyram would provide useful information and that there were no new chemicals in the pipeline suitable for this purpose in the near future.

175. The Delegation of Austaralia expressed the concern that suggestions that the current CCPR processes required improvement were being used as an argument to support the project and indicated that no tangible scientific or statistical evidence had been forwarded to demonstrate any level of MRL disharmonization.

176. After an extensive discussion and despite of the support by many delegations, the Committee did not reach an agreement to initiate the pilot project as many delegations were not in favour. Many delegations, especially from developing countries, expressed the view that a very good opportunity to learn and benefit from this pilot project had been lost and expressed their disappointment with this decision.

## REVISION OF THE RISK ANALYSIS PRINCIPLES APPLIED BY THE CODEX COMMITTEE ON PESTICIDE RESIDUES (Agenda Item 9)[17]

177. The 31st Session of the Codex Alimentarius Commission approved the revision of the Risk Analysis Principles applied by the Codex Committee on Pesticide Residues and the establishment of an electronic Working Group led by Argentina to carry out this revision as agreed to by the 40th Session of the Committee on Pesticide Residues.

178. The Delegation of Argentina, speaking as the leading country of the Working Group, introduced the document and reported on progress to date and highlighted the pending issues for consideration by the Working Group, these included: the MRL Periodic Re-Evaluation Procedure; the deletion of MRLs without scientific grounds; the modification of the Criteria for the Prioritization with respect to compounds not leading to detectable residues; the consideration of other legitimate factors when establishing MRLs for for pesticides; MRLs for fat-soluble pesticides and the establishment of acute reference dose (ArfD); and the consideration of a revised layout for the Risk Analysis Principles document which relates to a re-arrangement of the sections of the text but not to changes in the content of the document. The Delegation drew the attention of the Committee to the discrepancies between the English and Spanish versions and solicited their alignment in order to ensure consistency of both versions.

179. The Delegation of Japan stressed the need to include newly agreed CCPR risk management policies such as “concern form” and “proposal for alternative GAPs” and suggested the work on the revision of periodic review procedure and modification of the prioritization criteria with respect to compounds leading to no detectable residues be separated from the other work of consodidating the criteria, procedures and policies already agreed by the CCPR.

180. Several delegations were in support of continuing to discuss the withdrawal of MRLs for pesticides when they were no longer supported by a government and/or industry but still in use in other countries, especially when there were no identified safety concern associated with their use, as the costs associated with the JMPR re-evaluation of such pesticides was difficult to cope with by developing countries.

181. Many delegations supported the retention of the periodic re-evaluation procedures although it was proposed that data review requirements and procedures for revocation of MRLs should be revised especially providing criteria for MRLs revocation.

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[17] CX/PR 09/41/7. CX/PR 09/41/7-Add.1 (Not issued due to late availability of the document). Comments from Argentina (CRD 13); China (CRD 17); and Japan (CRD 19).

182. The WHO JMPR Secretariat noted that, in their view, it was important to keep the periodic re-evaluation programme, since it was the only way to assure that systematic review of new toxicological or residue data was done. If a review was based on an ad hoc basis, criteria would have to be established and it was not clear who would observe this and nominate chemicals for re-evaluation criteria. Moreover, having compounds scheduled in advance in the Priority List of Pesticides gave interested parties an opportunity to be prepared to provide the proper data for the re-evaluation.

183. In view of the above discussion, the Committee agreed to retain the Periodic Re-Evaluation Procedure while acknowledging that there was a need to review data requirements and procedures for revocation of MRLs for pesticides.

184. The Committee further agreed to re-convene the electronic Working Group led by Argentina, open to all Codex members and observers and working in English and Spanish, to revise the Risk Analysis Principles applied by the Committee on Pesticide Residues in light of the above discussion and comments submitted to the current Session and to address pending issues for circulation, comments and consideration at the 42nd Session of the Committee.

185. The Committee recalled that in 2011, the Committee on General Principles would review the consistency of risk analysis principles elaborated by relevant subsidiary bodies of the Commission, therefore, the revision should be done on the understanding that the document should be finalized by 2010 in order to present a revised Risk Analysis Principles to the CCGP in 2011.

## ESTABLISHMENT OF CODEX PRIORITY LIST FOR PESTICIDES (Agenda Item 10)[18]

186. The report of the electronic working group was introduced by its Chair, Mr Ian Reichstein (Australia). He pointed out the new format of the working document, in particular the table of compounds which now included more detailed information, such as the nominating country, crops for which MRLs were sought, and the crops and compounds being supported and that this would inform Members ahead of time regarding uncertainties in support of compounds and to allow members sufficient time to generate and provide relevant data for additional crops. The Chair informed the Committee that more efforts had been undertaken to further align toxicological and residue evaluations, and by 2012/2013 alignment should have been fully achieved.

187. Furthermore the Working Group Chair noted that there have been misunderstandings regarding the timelines for finalising the evaluation schedules. It was confirmed that the proposals for evaluation by the JMPR are finalized by the Committee for adoption by the CAC in the same year and no further changes to the current year's schedule were possible. For example the CCPR41 meeting of 2009 will finalize the priority requests for the 2010 JMPR meeting.

188. The report of the electronic working group was then introduced with focused discussion on changes in scheduling of compounds as listed in CRD1.

**Scheduling of compounds:**

189. The Committee was informed of the following changes for the 2009 JMPR schedule.

190. Based on the decision taken by the Committee under agenda item 8, the tentatively scheduled evaluation of fluopyram as a pilot project will be removed from the 2009 schedule, and moved to 2010, not as pilot project, but as a normal full evaluation. Procymidone is no longer supported by the manufacturer hence no residue evaluation can be performed. As a consequence existing CXLs will be revoked in the future if no further support will be provided.

191. For boscalid, based on discussions under agenda item 5, the JMPR will review data on rotational crops in 2009 and evaluate data on hops in 2010.

[18] ALINORM 08/31/24, Appendix X, CX/PR 09/41/8, CX/PR 09/41/8-Add.1; CRD 1 (Report of the working group); CRD 5 (EC); CRD 7 (USA); CRD 17 (China).

**New Compounds:**

192. With respect to the requests for evaluation of new compounds for both toxicology and residues, the following proposals are made:

193. For 2010 dicamba, meptyldinocap, etoxazole, clothianidin; cyproconazole, thiamethoxam, flubendiamide; fluopyram; for 2011 MCPA, emamectin-benzoate, clopyralid and ethaboxam are tentatively scheduled.

194. No further new compounds have been scheduled at this point.

**Periodic Re-evaluations**

195. For 2010 dithianon and tebuconazole are tentatively scheduled for toxicological re-evaluation, for residue evaluations azinphos-methyl, bifenthrin, cadusafos and chlorotalonil are scheduled. Vinclozolin is no longer supported and was hence removed from the schedule; consequently CXLs will be considered for revocation in the future if no support is indicated. Residue evaluations of amitraz and cycloxydim were moved to 2012 at the request of the manufacturers. The EC requested earlier re-evaluation of toxicology and residues for amitraz because current evaluations are old and outdated. However the data will not be available earlier and the compound will be scheduled for 2012.

196. For 2011 diquat, etofenprox and dicofol (supported by India for tea) are scheduled for toxicological and residue evaluation. In addition dichlorvos, fenbutatin oxide and fenpropathrin are scheduled for toxicological re-evaluation; cycloxidim, dithianon, and tebuconazole scheduled for residue re-evaluation.

197. For 2012 amitraz, bentazone, disulfoton, fenvalerate, glufosinate-ammonium and tecnazene are tentatively scheduled for periodic re-evaluation of toxicology and residues; in addition aldicarb was tentatively scheduled for toxicological evaluation and dichlorvos, fenpropathrin, fenbutatin oxide and oxamyl for residue evaluation.

198. For 2013 bromide ion, dichlofluanid, dinocab, metalaxyl, methidathion, triforine, and aldicarb (residues only) are tentatively scheduled for re-evaluation of toxicology and residues.

199. For 2014-2016 compounds are tentatively scheduled for re-evaluation and no changes have been proposed compared to the document provided for this session by the EWG.

200. The Chair of the electronic working group pointed out that for some compounds information on continued support and on the crops for which MRLs are sought is still missing and that this information should be provided through the electronic working group for consideration at the next session of the Committee.

**Evaluations**

201. For 2010 additional MRLs have been requested for a number of compounds and commodities as listed in the document, with no changes requested.

202. For 2011 in addition to the additional MRL requests already listed, acephate (rice) was requested, and based on discussions under agenda item 5 cyfluthrin (soy bean), cypermethrin (citrus, asparagus, tea) and profenofos (chilli pepper and chilli pepper dry) were proposed. Oxamyl residue evaluation was moved to 2012.

203. No further changes with respect to evaluations are to be reported.

204. The chair of the electronic working group drew the Committee's attention to a new Appendix 3 which will list chemicals for which specific GAPs for certain commodities are no longer supported. The EC supported this initiative to ensure when a chemical is scheduled for re-evaluation the information in Appendix 3 can be taken into consideration.

205. The JMPR Secretariat informed the Committee that a number of concerns raised by the EC regarding toxicological evaluations had been raised during discussions under agenda item 5. Concern forms have been submitted (procymidone, carbofuran, carbaryl, tebuconazole) or are still pending (methomyl), and JMPR will attempt to address as many of these concerns as possible at the 2009 meeting and the rest at the 2010 meeting.

206. The Committee thanked the chair of the electronic working group for the excellent work and the Committee agreed to forward the amended priority list to the 32nd Session of the Codex Alimentarius Commission for approval of new work (Appendix XI).

207. The Committee also agreed to re-establish the electronic working group under the chairmanship of Australia, working in English only, and encouraged interested parties to participate and to provide information to this working group.

**OTHER BUSINESS AND FUTURE WORK (Agenda Item 11)**

**DISCUSSION PAPER ON THE GUIDANCE TO FACILITATE THE ESTABLISHMENT OF CODEX MRLS FOR MINOR USE AND SPECIALTY CROPS[19] (Agenda Item 11(i))**

208. The Committee recalled that at its last session it had agreed to establish an electronic working group chaired by United States and co-chaired by Australia and Kenya, which would prepare a discussion paper to provide guidance to facilitate the establishment of Codex MRLs for minor uses and specialty crops.

209. The Delegation of Kenya introduced the Discussion Paper, which contained several recommendations based on the responses to a questionnaire circulated to members of the Electronic Working Group. These recommendations, among others, related to the inclusion of new commodities in the Codex Classification; encouraging the development of representative commodities; training in residue data generation and submission to JMPR; fostering collaboration to develop and promote submissions to JMPR for prioritised specialty crops and minor uses; promoting the pilot project on JMPR recommending MRLs before national authorities; supporting the development and use of a global MRL calculator and proposing suitable definitions for minor uses and specialty crops. The Delegation further proposed to re-establish the Electronic Working Group on Minor Uses and Specialty Crops in order to implement the recommendations contained in the Discussion Paper.

210. The Committee expressed its appreciation of the work of the Electronic Working Group. Many delegations supported the recommendations, stating that these recommended actions would facilitate the establishment of MRLs for minor uses and specialty crops, as well as definitions of minor uses and specialty crops proposed by the Electronic Working Group.

211. The Committee noted that the recommendation concerning development of a training manual and programs on the generation and submission of data to the JMPR was outside the mandate of the Committee and is addressed to FAO and WHO.

212. The Delegation of Thailand informed the Committee that in Southeast Asia harmonization of MRLs had been considered by an expert group, which had expressed strong interest in the ongoing discussion in the CCPR. The Delegation further pointed out that although the JMPR used different data requirements for minor crops, no clear definition of minor crops has been agreed by either the CCPR or the JMPR and suggested the development of such a definition, which, for example, could be based on world production and/or proportion to daily diet.

213. The Delegation of the Czech Republic, speaking on behalf of the Member States of the European Community, while supporting in general the recommendations of the Electronic Working Group, reminded the Committee that both the CCPR and OECD were undertaking work on minor uses and specialty crops and stated that the two organizations should work collaboratively and avoid duplication of work.

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19 CX/PR 09/41/9; RD 4 (Kenya); CRD 10 (OECD Secretariat and Australia); CRD 11 (Thailand); CRD 12 (Mali); CRD 16 (Brazil).

214. The Observer from CropLife International, while supporting further work by the Committee on this matter, indicated that in order to allow for pesticides for minor uses and specialty crops, national legislation should be developed to promote their registration and drew the attention of the Committee to a training manual for data submitters on procedures how to work with JMPR and CCPR which had been elaborated by CropLife International and made publicly available.

215. After some discussion, the Committee agreed to re-establish the Electronic Working Group on Minor Uses and Specialty Crops, led by the United States of America and co-chaired by Australia and Kenya and working in English only, which would continue to identify and address issues related to minor uses and specialty crops (within mandate of the CCPR) and specifically would further elaborate the definitions of minor use and specialty crops for use by the CCPR and JMPR and identify priority minor uses and specialty crops for MRL setting for proposing in the CCPR priority scheduling and facilitate submissions to JMPR for these.

**DISCUSSION PAPER ON THE EVALUATION OF DISTRIBUTION OF PESTICIDE RESIDUES AFTER PRIMARY PROCESS IN CITRUS FRUIT, POME FRUIT, OILSEEDS AND WINE GRAPES (Agenda Item 11(ii))[20]**

216. The Committee noted that this Discussion Paper had also been considered by the Working Group on Methods of Analysis (*see* Agenda Item 7). The Delegation of the European Community explained that the paper investigated factors affecting the concentration or dilution of pesticide residues in primary processed foods (PPF) (juice, wine and olive oil) and concluded that the *n*-octanol/water partition coefficient (Kow) of pesticides could be used in the first rough estimate of processing factors, which could be used in intake assessments. The Delegation expressed the willingness to continue this study further.

217. The Delegation of India pointed out that only a small portion of pesticide residues in black tea leaves were usually transferred to tea brew after infusion, especially when the pesticide had a high Kow value, and that MRLs should be set for tea brew and not for tea leaves.

**FURTHER CONSIDERATION OF PROCESSING AS RELATED TO THE ESTABLISHMENT OF MRLS FOR PROCESSED FOODS: RECOMMENDATIONS ON PRINCIPLES AND PRACTICE (Agenda Item 11(iii))[21]**

218. The Delegation of the European Community introduced the Discussion Paper prepared jointly with the United States of America, which aimed to examine how and when MRLs for processed commodity should be established, which could be considered for inclusion in the Risk Analysis Principles applied by the CCPR. The Delegation drew the attention of the Committee to the ten conclusions and recommendations contained in the document.

219. The Observer from International Fruit Juice Union (IFJU) pointed out that fruit juices were usually transported as concentrates in international trade, that the concentration of pesticide residues in fruit juice concentrates would generally be five to six times higher than in the reconstituted juices for consumption, and that this concentration was occasionally not taken into account in the regulation of pesticide residues by national authorities. The Observer requested the Committee to make a statement that appropriate concentration factors should be considered when MRLs were applied to concentrated juices.

220. The Committee expressed its appreciation for the work done by the European Community and the United States of America and, noting that processing factors were developed by the JMPR to derive recommended MRLs and published in JMPR reports, supported the following recommendations contained in the Discussion Paper:

- To reaffirm its policy of establishing MRLs for important processed commodities;

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20 CX/PR 09/41/10; CRD 16 (Brazil)

21 CX/PR 09/41/11; CRD 16 (Brazil).

- to continue the practice of recommending MRLs for processed commodities only where there is a significant increase in residue from the RAC to the processed commodity (PF >1.3) and/or where the calculated processed commodities MRL is less than the MRL of the corresponding RAC;

- to continue the practice of recommending MRLs for processed commodities where, due to the nature of the residues during some specific process, significant amounts of other relevant metabolites appear or increase; and

- to support the current JMPR practice of evaluating all processing studies provided and including in each *Evaluation/Review* a summary table of all validated processing factors.

221. The Delegation of France proposed that the four recommendations agreed above should be considered for inclusion in the ongoing revision of the Risk Analysis Principles applied by the CCPR.

222. The Committee agreed that there was no need for further elaboration of the document.

**DATE AND PLACE OF THE NEXT SESSION (Agenda Item 12)**

223. The Committee was informed that its 42nd Session was tentatively scheduled to be held in Xian, China, from 19 through 24 April 2010, the final arrangements being subject to confirmation by the Host Country and the Codex Secretariat.

**Annex 1**

## SUMMARY STATUS OF WORK

| Subject | Step | Action by | Reference |
|---|---|---|---|
| Draft and Revised Draft MRLs | 8 | Governments, 32nd CAC | Paras 60 – 130 and Appendix II |
| Proposed Draft and Revised Draft MRLs | 5/8 | Governments, 32nd CAC | Paras 60 – 130 and Appendix III |
| Proposed Draft MRLs | 5 | Governments, 32nd CAC, Governments, 42nd CPR | Paras 60 – 130 and Appendix IV |
| Codex Maximum Residue Limits Recommended for Revocation | | Governments, 32nd CAC | Paras 60 – 130 and Appendix V |
| Proposed Draft and Draft MRLs Retained at Steps 7 and 4 | 7/4 | JMPR, Governments, CCPR (depending on the year of the JMPR clarification) | Paras 60 – 130 and Appendix VI |
| Draft MRLs Returned to Step 6 | 6 | Governments, 2009 JMPR, 42nd CCPR | Paras 60 – 130 and Appendix VII |
| Proposed Draft Revision of the Codex Classification of Foods and Animal Feeds - *Proposals for Eight Commodity Groups: Bulb Vegetables*; *Fruiting Vegetables, other than cucurbits*; *Berries and other Small Fruits*; *Edible Fungi*; *Citrus Fruits*; *Pome Fruits*; *Stone Fruits*; and *Oilseeds* | 5 | Governments, 42nd CCPR | Para. 146 and Appendix IX |
| Proposed Draft Revision of the Guidelines on the Estimation of Uncertainty of results for the determination of Pesticide Residues (CAC/RCP 59-2006) at Step 3 | 3 | Governments, EWG (IAEA), 42nd CCPR | Para. 160 and Appendix X |
| Proposed Draft Principles and Guidance for the Selection of Representative Commodities for the Extrapolation of MRLs to Commodity Groups | 2/3 | USA, 42nd CCPR | Para. 155 |
| Revision of the CCPR Risk Analysis Principles | Proce-dure | EWG led by Argentina, Governments, 42nd CCPR | Paras 177 - 185 |
| **Discussion papers:** | | | |
| The Use of Kow (n-octanol-water partition coefficient) for Processing Factors | - | European Community, 42nd CCPR (Working Group on Methods of Analysis and Sampling) | Para. 158 |
| The Guidance to Facilitate the Establishment of Codex MRLs for Minor Use and Specialty Crops | - | EWG led by the USA and co-chaired by Australia and Kenya | Paras 208 - 215 |
| **New work**: | | | |
| Priority List of Pesticides (New Pesticides and Pesticides under Periodic Review) | 1/2/3 | 32nd CAC, Governments, Australia, 42nd CCPR | Paras 186 - 207 and Appendix XI |

| Subject | Step | Action by | Reference |
|---|---|---|---|
| **Discontinuation of work:** | | | |
| Discontinuation of Work on the Proposed Draft and Draft Maximum Residue Limits for Pesticides | | Governments, 31st CAC | Paras 60 - 130 and Appendix VIII |

**APPENDIX I**

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**APPENDIX II**

## DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

**(Recommended for adoption at Step 8)**

| | Commodity | MRL (mg/kg) | Source | Step | Note |
|---|---|---|---|---|---|
| **8** | **Carbaryl** | | | | |
| FC | 0001 Citrus fruits | 15 | | 8 | |
| **133** | **Triadimefon** | | | | |
| FI | 0327 Banana | 1 | | 8 | Based on triadimenol use only |
| DF | 0269 Dried grapes (=currants, raisins and sultanas) | 10 | | 8 | Based on triadimefon and triadimenol uses |
| VC | 0045 Fruiting vegetables, cucurbits | 0.2 | | 8 | Based on triadimefon uses only |
| VO | 0050 Fruiting vegetables, other than cucurbits | 1 | | 8 | Except fungi and sweet corn. Based on triadimefon and triadimenol uses |
| **165** | **Flusilazole** | | | | |
| MO | 0105 Edible offal (mammalian) | 2 | | 8 | |
| FS | 0245 Nectarine | 0.2 | | 8 | |
| FS | 0247 Peach | 0.2 | | 8 | |
| FP | 0009 Pome fruits | 0.3 | | 8 | |
| **168** | **Triadimenol** | | | | |
| FI | 0327 Banana | 1 | | 8 | Based on triadimenol use only |
| DF | 0269 Dried grapes (=currants, raisins and sultanas) | 10 | | 8 | Based on triadimefon and triadimenol uses |
| VC | 0045 Fruiting vegetables, cucurbits | 0.2 | | 8 | Based on triadimefon and triadimenol uses |
| VO | 0050 Fruiting vegetables, other than cucurbits | 1 | | 8 | Except fungi and sweet corn.Based on triadimefon uses only |

**APPENDIX III**

## PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

**(Recommended for adoption at Step 5/8 with omission of Steps 6 and 7)**

| | Commodity | | MRL (mg/kg) | | | Step | Note |
|---|---|---|---|---|---|---|---|
| **27** | **Dimethoate** | | | | | | |
| HS | 0444 | Chilli peppers (dry) | 3 | | | 5/8 | |
| VL | 0482 | Lettuce, Head | 0.3 | | | 5/8 | |
| VO | 0445 | Peppers, Sweet | 0.5 | | | 5/8 | |
| **30** | **Diphenylamine** | | | | | | |
| FM | 0183 | Milk fats | 0.01 | | | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | | 5/8 | |
| **35** | **Ethoxyquin** | | | | | | |
| FP | 0230 | Pear | 3 | | Po | 5/8 | |
| **49** | **Malathion** | | | | | | |
| GC | 0654 | Wheat | 10 | | | 5/8 | |
| CM | 0654 | Wheat bran, Unprocessed | 25 | | | 5/8 | |
| **94** | **Methomyl** | | | | | | |
| VC | 0045 | Fruiting vegetables, cucurbits | 0.1 | | | 5/8 | |
| FB | 0269 | Grapes | 0.3 | | | 5/8 | |
| VL | 0482 | Lettuce, Head | 0.2 | | | 5/8 | |
| VL | 0483 | Lettuce, Leaf | 0.2 | | | 5/8 | |
| FP | 0230 | Pear | 0.3 | | | 5/8 | |
| VO | 0448 | Tomato | 1 | | | 5/8 | |
| **118** | **Cypermethrins (including alpha- and zeta-cypermethrins)** | | | | | | |
| AL | 1020 | Alfalfa fodder | 30 acZ | | | 5/8 | |
| VS | 0620 | Artichoke, Globe | 0.1 Ac | | | 5/8 | |
| AL | 0061 | Bean fodder | 2 Acz | | | 5/8 | |
| VB | 0040 | Brassica (cole or cabbage) vegetables, Head cabbages, Flowerhead brassicas | 1 cAz | | | 5/8 | |
| FT | 0289 | Carambola | 0.2C | | | 5/8 | |
| GC | 0080 | Cereal grains | 0.3 Acz | | | 5/8 | Except rice |
| HS | 0444 | Chilli peppers (dry) | 10 C | | | 5/8 | |
| SB | 0716 | Coffee beans | 0.05 aZ | (*) | | 5/8 | |
| DF | 0269 | Dried grapes (=currants, raisins and sultanas) | 0.5 cA | | | 5/8 | |
| FI | 0334 | Durian | 1C | | | 5/8 | |
| MO | 0105 | Edible offal (mammalian) | 0.05 | (*) | | 5/8 | |

| | Commodity | | MRL (mg/kg) | | | Step | Note |
|---|---|---|---|---|---|---|---|
| VO | 0440 | Egg plant | 0.03 A | | | 5/8 | |
| PE | 0112 | Eggs | 0.01 | (*) | | 5/8 | |
| VC | 0045 | Fruiting vegetables, cucurbits | 0.07 cAz | | | 5/8 | |
| FB | 0269 | Grapes | 0.2 cA | | | 5/8 | |
| VL | 0053 | Leafy vegetables | 0.7 cAz | | | 5/8 | |
| VA | 0384 | Leek | 0.05 cA | | | 5/8 | |
| VP | 0060 | Legume vegetables | 0.7 caZ | | | 5/8 | |
| FI | 0343 | Litchi | 2 C | | | 5/8 | |
| FI | 0342 | Longan | 1C | | | 5/8 | |
| FI | 0345 | Mango | 0.7 C | | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 2 | | (fat) | 5/8 | |
| FM | 0183 | Milk fats | 0.5 | | | 5/8 | |
| ML | 0106 | Milks | 0.05 | | | 5/8 | |
| SO | 0088 | Oilseed | 0.1 Acz | | | 5/8 | |
| VO | 0442 | Okra | 0.5 C | | | 5/8 | |
| OR | 0305 | Olive oil, Refined | 0.5 cA | | | 5/8 | |
| OC | 0305 | Olive oil, Virgin | 0.5 cA | | | 5/8 | |
| FT | 0305 | Olives | 0.05 | (*) | | 5/8 | |
| VA | 0385 | Onion, Bulb | 0.01 | (*) | | 5/8 | |
| FI | 0350 | Papaya | 0.5 C | | | 5/8 | |
| AL | 0072 | Pea hay or pea fodder (dry) | 2 Acz | | | 5/8 | |
| VO | 0444 | Peppers, Chili | 2 Cz | | | 5/8 | |
| VO | 0445 | Peppers, Sweet | 0.1aZ | | | 5/8 | |
| FP | 0009 | Pome fruits | 0.7 aZ | | | 5/8 | |
| PM | 0110 | Poultry meat | 0.05 | (*) | (fat) | 5/8 | |
| PO | 0111 | Poultry, Edible offal of | 0.05 | (*) | | 5/8 | |
| VD | 0070 | Pulses | 0.05 aZ | (*) | | 5/8 | |
| GC | 0649 | Rice | 2 aZ | | | 5/8 | |
| VR | 0075 | Root and tuber vegetables | 0.01Acz | (*) | | 5/8 | Except sugar beet |
| FS | 0012 | Stone fruits | 2 aZ | | | 5/8 | |
| AS | 0081 | Straw and fodder(dry)of cereal grains | 10 | | | 5/8 | |
| FB | 0275 | Strawberry | 0.07 A | | | 5/8 | |
| VR | 0596 | Sugar beet | 0.1Acz | | | 5/8 | |
| GS | 0659 | Sugar cane | 0.2 Z | | | 5/8 | |
| VO | 0447 | Sweet corn (corn-on-the-cob) | 0.05 Z | (*) | | 5/8 | |
| VO | 0448 | Tomato | 0.2 caZ | | | 5/8 | |

**146 Cyhalothrin (includes lambda-cyhalothrin)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| AM | 0660 | Almond hulls | 2 | | | 5/8 | |
| FS | 0240 | Apricot | 0.5 | | | 5/8 | |
| VS | 0621 | Asparagus | 0.02 | | | 5/8 | |
| GC | 0640 | Barley | 0.5 | | | 5/8 | |
| FB | 0018 | Berries and other small fruits | 0.2 | | | 5/8 | |
| VA | 0035 | Bulb vegetables | 0.2 | | | 5/8 | |
| VB | 0041 | Cabbages, Head | 0.3 | | | 5/8 | |
| FS | 0013 | Cherries | 0.3 | | | 5/8 | |
| HS | 0444 | Chilli peppers (dry) | 3 | | | 5/8 | |
| FC | 0001 | Citrus fruits | 0.2 | | | 5/8 | |

| | | Commodity | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|---|
| DF | 0269 | Dried grapes (=currants, raisins and sultanas) | 0.3 | | 5/8 | |
| VB | 0042 | Flowerhead brassicas | 0.5 | | 5/8 | |
| VC | 0045 | Fruiting vegetables, cucurbits | 0.05 | | 5/8 | |
| VO | 0050 | Fruiting vegetables, other than cucurbits | 0.3 | | 5/8 | Except Mushrooms |
| MO | 0098 | Kidney of cattle, goats, pigs & sheep | 0.2 | | 5/8 | |
| VP | 0060 | Legume vegetables | 0.2 | | 5/8 | |
| MO | 0099 | Liver of cattle, goats, pigs & sheep | 0.05 | | 5/8 | |
| GC | 0645 | Maize | 0.02 | | 5/8 | |
| FI | 0345 | Mango | 0.2 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 3 | (fat) | 5/8 | |
| ML | 0106 | Milks | 0.2 | | 5/8 | |
| FS | 0245 | Nectarine | 0.5 | | 5/8 | |
| GC | 0647 | Oats | 0.05 | | 5/8 | |
| SO | 0088 | Oilseed | 0.2 | | 5/8 | |
| FT | 0305 | Olives | 1 | | 5/8 | |
| FS | 0247 | Peach | 0.5 | | 5/8 | |
| FS | 0014 | Plums | 0.2 | | 5/8 | Except prunes |
| VD | 0070 | Pulses | 0.05 | | 5/8 | |
| GC | 0649 | Rice | 1 | | 5/8 | |
| VR | 0075 | Root and tuber vegetables | 0.01 | (*) | 5/8 | |
| GC | 0650 | Rye | 0.05 | | 5/8 | |
| AS | 0081 | Straw and fodder(dry)of cereal grains | 2 | | 5/8 | Dry weight |
| GS | 0659 | Sugar cane | 0.05 | | 5/8 | |
| TN | 0085 | Tree nuts | 0.01 | (*) | 5/8 | |
| GC | 0653 | Triticale | 0.05 | | 5/8 | |
| GC | 0654 | Wheat | 0.05 | | 5/8 | |
| CM | 0654 | Wheat bran, Unprocessed | 0.1 | | 5/8 | |

**171 Profenofos**

| | | | | | | |
|---|---|---|---|---|---|---|
| SO | 0691 | Cotton seed | 3 | | 5/8 | |
| MO | 0105 | Edible offal (mammalian) | 0.05 | (*) | 5/8 | |
| PE | 0112 | Eggs | 0.02 | (*) | 5/8 | |
| FI | 0345 | Mango | 0.2 | | 5/8 | |
| FI | 0346 | Mangosteen | 10 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.05 | (*) | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | 5/8 | |
| PM | 0110 | Poultry meat | 0.05 | (*) | 5/8 | |
| PO | 0111 | Poultry, Edible offal of | 0.05 | (*) | 5/8 | |
| VO | 0448 | Tomato | 10 | | 5/8 | |

**173 Buprofezin**

| | | | | | | |
|---|---|---|---|---|---|---|
| FC | 0001 | Citrus fruits | 1 | | 5/8 | |
| AB | 0001 | Citrus pulp, Dry | 2 | | 5/8 | |
| VC | 0424 | Cucumber | 0.2 | | 5/8 | |

| | Commodity | | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|---|
| MO | 0105 | Edible offal (mammalian) | 0.05 | (*) | 5/8 | |
| FI | 0345 | Mango | 0.1 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.05 | (*) | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | 5/8 | |
| VO | 0448 | Tomato | 1 | | 5/8 | |

**189 Tebuconazole**

| | | | | | | |
|---|---|---|---|---|---|---|
| SB | 0716 | Coffee beans | 0.1 | | 5/8 | |
| SM | 0716 | Coffee beans, Roasted | 0.5 | | 5/8 | |
| PE | 0112 | Eggs | 0.05 | (*) | 5/8 | |
| DH | 1100 | Hops, Dry | 30 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.05 | (*) | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | 5/8 | |
| PM | 0110 | Poultry meat | 0.05 | (*) | 5/8 | |
| PO | 0111 | Poultry, Edible offal of | 0.05 | (*) | 5/8 | |
| SO | 0495 | Rape seed | 0.5 | | 5/8 | |

**201 Chlorpropham**

| | | | | | | |
|---|---|---|---|---|---|---|
| FM | 0183 | Milk fats | 0.02 | | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | 5/8 | |

**206 Imidacloprid**

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0660 | Almond hulls | 5 | | 5/8 | on dry matter basis |
| FB | 0018 | Berries and other small fruits | 5 | | 5/8 | Except cranberry, grapes, and strawberry |
| SB | 0716 | Coffee beans | 1 | | 5/8 | |
| MO | 0105 | Edible offal (mammalian) | 0.3 | | 5/8 | |
| PE | 0112 | Eggs | 0.02 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.1 | | 5/8 | |
| ML | 0106 | Milks | 0.1 | | 5/8 | |
| SO | 0697 | Peanut | 1 | | 5/8 | |
| AL | 0697 | Peanut fodder | 30 | | 5/8 | on dry matter basis |
| VD | 0072 | Peas (dry) | 2 | | 5/8 | |
| VP | 0063 | Peas (pods and succulent=immature seeds) | 5 | | 5/8 | |
| VP | 0064 | Peas, Shelled (succulent seeds) | 2 | | 5/8 | |
| FI | 0355 | Pomegranate | 1 | | 5/8 | |
| PM | 0110 | Poultry meat | 0.02 | | 5/8 | |
| PO | 0111 | Poultry, Edible offal of | 0.05 | | 5/8 | |
| VL | 0494 | Radish leaves (including radish tops) | 5 | | 5/8 | |
| VR | 0075 | Root and tuber vegetables | 0.5 | | 5/8 | |
| FB | 0275 | Strawberry | 0.5 | | 5/8 | |
| SO | 0702 | Sunflower seed | 0.05 | (*) | 5/8 | |
| TN | 0085 | Tree nuts | 0.01 | | 5/8 | |

| | | Commodity | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|---|
| **229** | | **Azoxystrobin** | | | | |
| AM | 0660 | Almond hulls | 7 | | 5/8 | |
| VS | 0620 | Artichoke, Globe | 5 | | 5/8 | |
| VS | 0621 | Asparagus | 0.01 | (*) | 5/8 | |
| FI | 0327 | Banana | 2 | | 5/8 | |
| GC | 0640 | Barley | 0.5 | | 5/8 | |
| FB | 0018 | Berries and other small fruits | 5 | | 5/8 | Except cranberry, grapes, and strawberry |
| VB | 0040 | Brassica (cole or cabbage) vegetables, Head cabbages, Flowerhead brassicas | 5 | | 5/8 | |
| VA | 0035 | Bulb vegetables | 10 | | 5/8 | |
| VS | 0624 | Celery | 5 | | 5/8 | |
| HS | 0444 | Chilli peppers (dry) | 30 | | 5/8 | |
| FC | 0001 | Citrus fruits | 15 | | 5/8 | |
| SO | 0691 | Cotton seed | 0.7 | | 5/8 | |
| FB | 0265 | Cranberry | 0.5 | | 5/8 | |
| DH | 0170 | Dried herbs | 300 | | 5/8 | Except dry hops |
| MO | 0105 | Edible offal (mammalian) | 0.07 | | 5/8 | |
| PE | 0112 | Eggs | 0.01 | (*) | 5/8 | |
| VC | 0045 | Fruiting vegetables, cucurbits | 1 | | 5/8 | |
| VO | 0050 | Fruiting vegetables, other than cucurbits | 3 | | 5/8 | Except Mushrooms and Sweet corn |
| FB | 0269 | Grapes | 2 | | 5/8 | |
| HH | 0092 | Herbs | 70 | | 5/8 | |
| DH | 1100 | Hops, Dry | 30 | | 5/8 | |
| VP | 0060 | Legume vegetables | 3 | | 5/8 | |
| VL | 0482 | Lettuce, Head | 3 | | 5/8 | |
| VL | 0483 | Lettuce, Leaf | 3 | | 5/8 | |
| GC | 0645 | Maize | 0.02 | | 5/8 | |
| AS | 0645 | Maize fodder (dry) | 40 | | 5/8 | Dry weight |
| OR | 0645 | Maize oil, Edible | 0.1 | | 5/8 | |
| FI | 0345 | Mango | 0.7 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.05 | (fat) | 5/8 | |
| FM | 0183 | Milk fats | 0.03 | | 5/8 | |
| ML | 0106 | Milks | 0.01 | | 5/8 | |
| GC | 0647 | Oats | 0.5 | | 5/8 | |
| FI | 0350 | Papaya | 0.3 | | 5/8 | |
| SO | 0697 | Peanut | 0.2 | | 5/8 | |
| AL | 0697 | Peanut fodder | 30 | | 5/8 | |
| TN | 0675 | Pistachio nuts | 1 | | 5/8 | |
| FI | 0354 | Plantain | 2 | | 5/8 | |
| PM | 0110 | Poultry meat | 0.01 | (*) | 5/8 | |
| PO | 0111 | Poultry, Edible offal of | 0.01 | (*) | 5/8 | |
| GC | 0649 | Rice | 5 | | 5/8 | |
| VR | 0075 | Root and tuber vegetables | 1 | | 5/8 | |
| GC | 0650 | Rye | 0.2 | | 5/8 | |
| VD | 0541 | Soya bean (dry) | 0.5 | | 5/8 | |
| AL | 0541 | Soya bean fodder | 100 | | 5/8 | Dry weight |

| | | Commodity | MRL (mg/kg) | | | Step | Note |
|---|---|---|---|---|---|---|---|
| FS | 0012 | Stone fruits | 2 | | | 5/8 | |
| AS | 0081 | Straw and fodder(dry)of cereal grains | 15 | | | 5/8 | Dry weight. Except maize |
| FB | 0275 | Strawberry | 10 | | | 5/8 | |
| SO | 0702 | Sunflower seed | 0.5 | | | 5/8 | |
| TN | 0085 | Tree nuts | 0.01 | | | 5/8 | Except pistachios |
| GC | 0653 | Triticale | 0.2 | | | 5/8 | |
| GC | 0654 | Wheat | 0.2 | | | 5/8 | |
| VS | 0469 | Witloof chicory (sprouts) | 0.3 | | | 5/8 | |

**230 Chlorantraniliprole**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| VS | 0624 | Celery | 7 | | | 5/8 | |
| GC | 0080 | Cereal grains | 0.02 | | | 5/8 | |
| HS | 0444 | Chilli peppers (dry) | 5 | | | 5/8 | |
| SO | 0691 | Cotton seed | 0.3 | | | 5/8 | |
| MO | 0105 | Edible offal (mammalian) | 0.01 | (*) | | 5/8 | |
| PE | 0112 | Eggs | 0.01 | (*) | | 5/8 | |
| VC | 0045 | Fruiting vegetables, cucurbits | 0.3 | | | 5/8 | |
| VO | 0050 | Fruiting vegetables, other than cucurbits | 0.6 | | | 5/8 | Except Mushrooms and Sweet corn |
| FB | 0269 | Grapes | 1 | | | 5/8 | |
| VL | 0053 | Leafy vegetables | 20 | | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.01 | (*) | (fat) | 5/8 | |
| FM | 0183 | Milk fats | 0.1 | | | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | | 5/8 | |
| FP | 0009 | Pome fruits | 0.4 | | | 5/8 | |
| PM | 0110 | Poultry meat | 0.01 | (*) | (fat) | 5/8 | |
| PO | 0111 | Poultry, Edible offal of | 0.01 | (*) | | 5/8 | |
| VR | 0075 | Root and tuber vegetables | 0.02 | | | 5/8 | |
| FS | 0012 | Stone fruits | 1 | | | 5/8 | |
| AS | 0081 | Straw and fodder(dry)of cereal grains | 0.3 | | | 5/8 | |

**231 Mandipropamid**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| VA | 0389 | Spring Onion | 7 | | | 5/8 | |
| VB | 0400 | Broccoli | 2 | | | 5/8 | |
| VB | 0041 | Cabbages, Head | 3 | | | 5/8 | |
| VS | 0624 | Celery | 20 | | | 5/8 | |
| HS | 0444 | Chilli peppers (dry) | 10 | | | 5/8 | |
| VC | 0424 | Cucumber | 0.2 | | | 5/8 | |
| DF | 0269 | Dried grapes (=currants, raisins and sultanas) | 5 | | | 5/8 | |
| FB | 0269 | Grapes | 2 | | | 5/8 | |
| VL | 0053 | Leafy vegetables | 25 | | | 5/8 | |
| VC | 0046 | Melons, except watermelon | 0.5 | | | 5/8 | |
| VA | 0385 | Onion, Bulb | 0.1 | | | 5/8 | |
| VO | 0051 | Peppers | 1 | | | 5/8 | |
| VR | 0589 | Potato | 0.01 | (*) | | 5/8 | |

| | | Commodity | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|---|
| VC | 0431 | Squash,summer | 0.2 | | 5/8 | |
| VO | 0448 | Tomato | 0.3 | | 5/8 | |

**232 Prothioconazole**

| | | | | | | |
|---|---|---|---|---|---|---|
| GC | 0640 | Barley | 0.05 | | 5/8 | |
| OS | 0640 | Barley straw | 2 | | 5/8 | |
| MO | 0105 | Edible offal (mammalian) | 0.2 | | 5/8 | |
| MF | 0100 | Mammalian fats (except milk fats) | 0.01 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.01 | | 5/8 | |
| ML | 0106 | Milks | 0.004 | (*) | 5/8 | |
| OS | 0647 | Oat straw | 2 | | 5/8 | |
| GC | 0647 | Oats | 0.05 | | 5/8 | |
| SO | 0697 | Peanut | 0.02 | (*) | 5/8 | |
| SO | 0495 | Rape seed | 0.05 | | 5/8 | |
| GC | 0650 | Rye | 0.05 | | 5/8 | |
| OS | 0650 | Rye straw | 2 | | 5/8 | |
| GC | 0653 | Triticale | 0.05 | | 5/8 | |
| OS | 0653 | Triticale straw | 2 | | 5/8 | |
| GC | 0654 | Wheat | 0.05 | | 5/8 | |
| OS | 0654 | Wheat straw | 2 | | 5/8 | |

**233 Spinetoram**

| | | | | | | |
|---|---|---|---|---|---|---|
| MO | 0105 | Edible offal (mammalian) | 0.01 | (*) | 5/8 | |
| VL | 0482 | Lettuce, Head | 10 | | 5/8 | |
| VL | 0483 | Lettuce, Leaf | 10 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.2 | (fat) | 5/8 | |
| FM | 0183 | Milk fats | 0.1 | | 5/8 | |
| ML | 0106 | Milks | 0.01 | (*) | 5/8 | |
| FC | 0004 | Oranges, Sweet, Sour | 0.07 | | 5/8 | |
| FP | 0009 | Pome fruits | 0.05 | | 5/8 | |
| VR | 0596 | Sugar beet | 0.01 | (*) | 5/8 | |
| VO | 0448 | Tomato | 0.06 | | 5/8 | |
| TN | 0085 | Tree nuts | 0.01 | | 5/8 | |

**234 Spirotetramate**

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0660 | Almond hulls | 10 | | 5/8 | |
| VB | 0041 | Cabbages, Head | 2 | | 5/8 | |
| VS | 0624 | Celery | 4 | | 5/8 | |
| HS | 0444 | Chilli peppers (dry) | 15 | | 5/8 | |
| FC | 0001 | Citrus fruits | 0.5 | | 5/8 | |
| DF | 0269 | Dried grapes (=currants, raisins and sultanas) | 4 | | 5/8 | |
| MO | 0105 | Edible offal (mammalian) | 0.03 | | 5/8 | |
| VB | 0042 | Flowerhead brassicas | 1 | | 5/8 | |
| VC | 0045 | Fruiting vegetables, cucurbits | 0.2 | | 5/8 | |
| VO | 0050 | Fruiting vegetables, other than cucurbits | 1 | | 5/8 | Except sweet corn, mushrooms and chili pepper |

| | Commodity | | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|---|
| AB | 0269 | Grape pomace, Dry | 4 | | 5/8 | |
| FB | 0269 | Grapes | 2 | | 5/8 | |
| DH | 1100 | Hops, Dry | 15 | | 5/8 | |
| VL | 0053 | Leafy vegetables | 7 | | 5/8 | |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.01 | (*) | 5/8 | |
| ML | 0106 | Milks | 0.005 | (*) | 5/8 | |
| VO | 0444 | Peppers, Chili | 2 | | 5/8 | non-bell |
| VR | 0589 | Potato | 0.8 | | 5/8 | |
| DF | 0014 | Prunes | 5 | | 5/8 | dried plums |
| FS | 0012 | Stone fruits | 3 | | 5/8 | |
| TN | 0085 | Tree nuts | 0.5 | | 5/8 | |

**APPENDIX IV**

## PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

**(Recommended for adoption at Step 5)**

| | | Commodity | MRL (mg/kg) | Step | Note |
|---|---|---|---|---|---|
| **94** | **Methomyl** | | | | |
| FP | 0226 | Apple | 0.3 | 5 | Resulting from data on supervised trials with methomyl. The Previous MRL is from data on supervised trials with thiodicarb. |
| **118** | **Cypermethrins (including alpha- and zeta-cypermeth** | | | | |
| VS | 0621 | Asparagus | 0.01 Ac (*) | 5 | |
| **189** | **Tebuconazole** | | | | |
| VS | 0620 | Artichoke, Globe | 0.5 | 5 | |
| GC | 0640 | Barley | 2 | 5 | |
| AS | 0640 | Barley straw and fodder, Dry | 30 | 5 | |
| VB | 0040 | Brassica (cole or cabbage) vegetables, Head cabbages, Flowerhead brassicas | 1 | 5 | |
| VR | 0577 | Carrot | 0.5 | 5 | |
| VP | 0526 | Common bean (pods and/or immature seeds) | 2 | 5 | |
| MO | 0105 | Edible offal (mammalian) | 0.5 | 5 | |
| FB | 0267 | Elderberry | 2 | 5 | |
| VA | 0381 | Garlic | 0.1 | 5 | |
| VA | 0384 | Leek | 1 | 5 | |
| VL | 0482 | Lettuce, Head | 5 | 5 | |
| GC | 0645 | Maize | 0.1 | 5 | |
| FI | 0345 | Mango | 0.1 | 5 | |
| VC | 0046 | Melons, except watermelon | 0.2 | 5 | |
| VA | 0385 | Onion, Bulb | 0.1 | 5 | |
| FI | 0350 | Papaya | 2 | 5 | |
| SO | 0697 | Peanut | 0.1 | 5 | |
| FS | 0014 | Plums(including prunes) | 0.2 | 5 | Excluding prunes |
| FP | 0009 | Pome fruits | 1 | 5 | |
| DF | 0014 | Prunes | 0.5 | 5 | |
| GC | 0649 | Rice | 2 | 5 | |
| VD | 0541 | Soya bean (dry) | 0.1 | 5 | |
| VO | 0447 | Sweet corn (corn-on-the-cob) | 0.1 | 5 | |
| VO | 0448 | Tomato | 0.5 | 5 | |
| VC | 0432 | Watermelon | 0.1 | 5 | |
| **221** | **Boscalid** | | | | |
| FI | 0327 | Banana | 0.6 | 5 | |
| FI | 0341 | Kiwi fruit | 5 | 5 | |

**APPENDIX V**

## CODEX MAXIMUM RESIDUE LIMITS FOR PESTICIDES RECOMMENDED FOR REVOCATION

| | Commodity | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|
| **7** | **Captan** | | | | |
| FP | 0226 Apple | 25 | | CXL-D | |
| FS | 0247 Peach | 15 | | CXL-D | |
| FP | 0230 Pear | 25 | | CXL-D | |
| **8** | **Carbaryl** | | | | |
| FS | 0240 Apricot | 10 | | CXL-D | |
| FC | 0001 Citrus fruits | 7 | | CXL-D | |
| FB | 0269 Grapes | 5 | | CXL-D | |
| FS | 0245 Nectarine | 10 | | CXL-D | |
| FS | 0247 Peach | 10 | | CXL-D | |
| FP | 0230 Pear | 5 | | CXL-D | |
| VO | 0051 Peppers | 5 | | CXL-D | |
| **27** | **Dimethoate** | | | | |
| VL | 0482 Lettuce, Head | 2 | | CXL-D | |
| VO | 0051 Peppers | 1 | Po | CXL-D | |
| **30** | **Diphenylamine** | | | | |
| ML | 0812 Cattle milk | 0.0004 | (*) F | CXL-D | |
| **35** | **Ethoxyquin** | | | | |
| FP | 0230 Pear | 3 | Po | CXL-D | |
| **49** | **Malathion** | | | | |
| GC | 0654 Wheat | 0.5 | | CXL-D | |
| CF | 1211 Wheat flour | 0.2 | | CXL-D | |
| **53** | **Mevinphos** | | | | |
| VB | 0041 Cabbages, Head | 0.05 | | CXL-D | |
| **94** | **Methomyl** | | | | |
| VB | 0041 Cabbages, Head | 5 | | CXL-D | |
| VB | 0404 Cauliflower | 2 | | CXL-D | |
| VS | 0624 Celery | 2 | | CXL-D | |
| VC | 0424 Cucumber | 0.2 | | CXL-D | |
| FB | 0269 Grapes | 5 | | CXL-D | |
| VL | 0482 Lettuce, Head | 5 | | CXL-D | |
| VC | 0046 Melons, except watermelon | 0.2 | | CXL-D | |
| AL | 0528 Pea vines (green) | 40 | | CXL-D | |
| FP | 0230 Pear | 0.3 | | CXL-D | |
| VC | 0432 Watermelon | 0.2 | | CXL-D | |
| **95** | **Acephate** | | | | |
| VB | 0400 Broccoli | 2 | | CXL-D | |
| VB | 0404 Cauliflower | 2 | | CXL-D | |
| **96** | **Carbofuran** | | | | |

| | | Commodity | MRL (mg/kg) | | Step |
|---|---|---|---|---|---|
| ML | 0106 | Milks | 0.05 | (*) | CXL-D |
| VR | 0589 | Potato | 0.1 | (*) | CXL-D |
| **100** | **Methamidophos** | | | | |
| VB | 0404 | Cauliflower | 0.5 | | CXL-D |
| VO | 0444 | Peppers, Chili | 2 | | CXL-D |
| VO | 0445 | Peppers, Sweet | 1 | | CXL-D |
| **103** | **Phosmet** | | | | |
| FP | 0226 | Apple | 10 | | CXL-D |
| FP | 0230 | Pear | 10 | | CXL-D |
| **105** | **Dithiocarbamates** | | | | |
| FP | 0226 | Apple | 2 | | CXL-D |
| **112** | **Phorate** | | | | |
| GC | 0654 | Wheat | 0.05 | | CXL-D |
| **118** | **Cypermethrins (including alpha- and zeta-cypermethrins)** | | | | |
| GC | 0640 | Barley | 0.5 | | CXL-D |
| VP | 0062 | Beans, Shelled | 0.05 | (*) | CXL-D |
| FB | 0018 | Berries and other small fruits | 0.5 | | CXL-D |
| VB | 0040 | Brassica (cole or cabbage) vegetables, Head cabbages, Flowerhead brassicas | 1 | | CXL-D |
| FS | 0013 | Cherries | 1 | | CXL-D |
| HS | 0444 | Chilli peppers (dry) | 5 | | CXL-D |
| SB | 0716 | Coffee beans | 0.05 | (*) | CXL-D |
| VP | 0526 | Common bean (pods and/or immature seeds) | 0.5 | | CXL-D |
| VC | 0424 | Cucumber | 0.2 | | CXL-D |
| MO | 0105 | Edible offal (mammalian) | 0.05 | (*) | CXL-D |
| VO | 0440 | Egg plant | 0.2 | | CXL-D |
| PE | 0112 | Eggs | 0.05 | (*) | CXL-D |
| VL | 0480 | Kale | 1 | | CXL-D |
| VA | 0384 | Leek | 0.5 | | CXL-D |
| VL | 0482 | Lettuce, Head | 2 | | CXL-D |
| GC | 0645 | Maize | 0.05 | (*) | CXL-D |
| AS | 0645 | Maize fodder (dry) | 5 | | CXL-D |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.2 | (fat) | CXL-D |
| ML | 0106 | Milks | 0.05 | F | CXL-D |
| VO | 0450 | Mushrooms | 0.05 | (*) | CXL-D |
| FS | 0245 | Nectarine | 2 | | CXL-D |
| SO | 0089 | Oilseed, except peanut | 0.2 | | CXL-D |
| VA | 0385 | Onion, Bulb | 0.1 | | CXL-D |
| FS | 0247 | Peach | 2 | | CXL-D |
| SO | 0697 | Peanut | 0.05 | (*) | CXL-D |
| VP | 0063 | Peas (pods and succulent=immature seeds) | 0.05 | (*) | CXL-D |
| VO | 0051 | Peppers | 0.5 | | CXL-D |
| FS | 0014 | Plums(including prunes) | 1 | | CXL-D |
| FP | 0009 | Pome fruits | 2 | | CXL-D |

| | Commodity | MRL (mg/kg) | | Step |
|---|---|---|---|---|
| PM | 0110 Poultry meat | 0.05 | (*) | CXL-D |
| VR | 0075 Root and tuber vegetables | 0.05 | (*) | CXL-D |
| AS | 0651 Sorghum straw and fodder, Dry | 5 | | CXL-D |
| VD | 0541 Soya bean (dry) | 0.05 | (*) | CXL-D |
| VL | 0502 Spinach | 2 | | CXL-D |
| VO | 0447 Sweet corn (corn-on-the-cob) | 0.05 | (*) | CXL-D |
| VO | 0448 Tomato | 0.5 | | CXL-D |
| OR | 0172 Vegetable oils, Edible | 0.5 | | CXL-D |
| GC | 0654 Wheat | 0.2 | | CXL-D |
| AS | 0654 Wheat straw and fodder, Dry | 5 | | CXL-D |
| **145** | **Carbosulfan** | | | |
| ML | 0106 Milks | 0.03 | (*) | CXL-D |
| **146** | **Cyhalothrin (includes lambda-cyhalothrin)** | | | |
| VB | 0041 Cabbages, Head | 0.2 | | CXL-D |
| SO | 0691 Cotton seed | 0.02 | (*) | CXL-D |
| OC | 0691 Cotton seed oil, Crude | 0.02 | (*) | CXL-D |
| OR | 0691 Cotton seed oil, edible | 0.02 | (*) | CXL-D |
| VR | 0589 Potato | 0.02 | (*) | CXL-D |
| **157** | **Cyfluthrin/beta-cyfluthrin** | | | |
| HS | 0444 Chilli peppers (dry) | 2 | | CXL-D |
| **165** | **Flusilazole** | | | |
| MO | 0812 Cattle, Edible offal of | 0.02 | (*) | CXL-D |
| **168** | **Triadimenol** | | | |
| FI | 0327 Banana | 0.2 | | CXL-D |
| VC | 0045 Fruiting vegetables, cucurbits | 2 | | CXL-D |
| **171** | **Profenofos** | | | |
| VB | 0041 Cabbages, Head | 1 | | CXL-D |
| SO | 0691 Cotton seed | 2 | | CXL-D |
| OR | 0691 Cotton seed oil, edible | 0.05 | (*) | CXL-D |
| PE | 0112 Eggs | 0.02 | (*) | CXL-D |
| MM | 0095 Meat (from mammals other than marine mammals) | 0.05 | (*) | CXL-D |
| ML | 0106 Milks | 0.01 | (*) | CXL-D |
| VO | 0445 Peppers, Sweet | 0.5 | | CXL-D |
| VR | 0589 Potato | 0.05 | (*) | CXL-D |
| VO | 0448 Tomato | 2 | | CXL-D |
| **173** | **Buprofezin** | | | |
| VC | 0424 Cucumber | 1 | | CXL-D |
| FC | 0004 Oranges, Sweet, Sour | 0.5 | | CXL-D |
| VO | 0448 Tomato | 1 | | CXL-D |
| **189** | **Tebuconazole** | | | |
| MM | 0812 Cattle meat | 0.05 | (*) | CXL-D |
| ML | 0812 Cattle milk | 0.01 | (*) | CXL-D |
| PE | 0840 Chicken eggs | 0.05 | (*) | CXL-D |
| PM | 0840 Chicken meat | 0.05 | (*) | CXL-D |

| | | Commodity | MRL (mg/kg) | | Step |
|---|---|---|---|---|---|
| PO | 0840 | Chicken, Edible offal of | 0.05 | (*) | CXL-D |
| SO | 0495 | Rape seed | 0.05 | | CXL-D |
| **201** | **Chlorpropham** | | | | |
| ML | 0812 | Cattle milk | 0.0005 | (*) F | CXL-D |
| **206** | **Imidacloprid** | | | | |
| MO | 0105 | Edible offal (mammalian) | 0.05 | | CXL-D |
| PE | 0112 | Eggs | 0.02 | (*) | CXL-D |
| MM | 0095 | Meat (from mammals other than marine mammals) | 0.02 | (*) | CXL-D |
| ML | 0106 | Milks | 0.02 | (*) | CXL-D |
| TN | 0672 | Pecan | 0.05 | | CXL-D |
| VR | 0589 | Potato | 0.5 | | CXL-D |
| PM | 0110 | Poultry meat | 0.02 | (*) | CXL-D |
| PO | 0111 | Poultry, Edible offal of | 0.02 | (*) | CXL-D |
| VR | 0596 | Sugar beet | 0.05 | (*) | CXL-D |

**APPENDIX VI**

## PROPOSED DRAFT AND DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

**(Retained at Steps 7 and 4 respectively)**

| Commodity | | | MRL (mg/kg) | | Source | Step | Note |
|---|---|---|---|---|---|---|---|
| **MRLs retained at Step 7** | | | | | | | |
| **90 Chlorpyrifos-Methyl** | | | | | | | |
| GC | 0640 | Barley | 10 | | Po | 7 | |
| GC | 0647 | Oats | 10 | | Po | 7 | |
| GC | 0649 | Rice | 10 | | Po | 7 | |
| **96 Carbofuran** | | | | | | | |
| FC | 0206 | Mandarin | 0.5 | | | 7 | Based on the use of carbosulfan. |
| FC | 0004 | Oranges, Sweet, Sour | 0.5 | | | 7 | |
| **112 Phorate** | | | | | | | |
| VR | 0589 | Potato | 0.5 | | | 7 | |
| **126 Oxamyl** | | | | | | | |
| FC | 0001 | Citrus fruits | 3 | | | 7 | |
| VC | 0424 | Cucumber | 1 | | | 7 | |
| VC | 0046 | Melons, except watermelon | 1 | | | 7 | |
| VO | 0051 | Peppers | 5 | | | 7 | |
| **133 Triadimefon** | | | | | | | |
| FB | 0269 | Grapes | 5 | | | 7 | Based on triadimefon and triadimenol uses |
| **142 Prochloraz** | | | | | | | |
| VO | 0450 | Mushrooms | 40 | | | 7 | |
| **143 Triazophos** | | | | | | | |
| VP | 0541 | Soya bean (immature seeds) | 1 | | | 7 | With the pod. |
| **145 Carbosulfan** | | | | | | | |
| FC | 0206 | Mandarin | 0.1 | | | 7 | |
| FC | 0004 | Oranges, Sweet, Sour | 0.1 | | | 7 | |
| **168 Triadimenol** | | | | | | | |
| FB | 0269 | Grapes | 5 | | | 7 | Based on triadimefon and triadimenol uses |
| **193 Fenpyroximate** | | | | | | | |
| FB | 0269 | Grapes | 1 | | | 7 | |
| **194 Haloxyfop** | | | | | | | |
| PE | 0840 | Chicken eggs | 0.01 | (*) | | 7 | |
| PM | 0840 | Chicken meat | 0.01 | (*) | | 7 | |
| PO | 0840 | Chicken, Edible offal of | 0.05 | | | 7 | |
| SO | 0691 | Cotton seed | 0.2 | | | 7 | |
| OC | 0691 | Cotton seed oil, Crude | 0.5 | | | 7 | |
| AM | 1051 | Fodder beet | 0.3 | | | 7 | |

| | | Commodity | MRL (mg/kg) | | Source | Step | Note |
|---|---|---|---|---|---|---|---|
| SO | 0697 | Peanut | 0.05 | | | 7 | |
| VP | 0063 | Peas (pods and succulent=immature seeds) | 0.2 | | | 7 | |
| VR | 0589 | Potato | 0.1 | | | 7 | |
| VD | 0070 | Pulses | 0.2 | | | 7 | |
| SO | 0495 | Rape seed | 2 | | | 7 | |
| OC | 0495 | Rape seed oil, Crude | 5 | | | 7 | |
| OR | 0495 | Rapeseed oil, Edible | 5 | | | 7 | |
| CM | 1206 | Rice bran, Unprocessed | 0.02 | (*) | | 7 | |
| CM | 0649 | Rice, Husked | 0.02 | (*) | | 7 | |
| CM | 1205 | Rice, Polished | 0.02 | (*) | | 7 | |
| OC | 0541 | Soya bean oil, Crude | 0.2 | | | 7 | |
| OR | 0541 | Soya bean oil, Refined | 0.2 | | | 7 | |
| VR | 0596 | Sugar beet | 0.3 | | | 7 | |
| SO | 0702 | Sunflower seed | 0.2 | | | 7 | |

**204 Esfenvalerate**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SO | 0691 | Cotton seed | 0.05 | | | 7 | |
| VO | 0448 | Tomato | 0.1 | | | 7 | |
| GC | 0654 | Wheat | 0.05 | | | 7 | |

**212 Metalaxyl-M**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FP | 0226 | Apple | 0.02 | (*) | | 7 | |
| SB | 0715 | Cacao beans | 0.02 | | | 7 | |
| FB | 0269 | Grapes | 1 | | | 7 | |
| VL | 0482 | Lettuce, Head | 0.5 | | | 7 | |
| VA | 0385 | Onion, Bulb | 0.03 | | | 7 | |
| VO | 0445 | Peppers, Sweet | 0.5 | | | 7 | |
| VR | 0589 | Potato | 0.02 | (*) | | 7 | |
| VL | 0502 | Spinach | 0.1 | | | 7 | |
| SO | 0702 | Sunflower seed | 0.02 | (*) | | 7 | |
| VO | 0448 | Tomato | 0.2 | | | 7 | |

**MRLs retained at Step 4**

**194 Haloxyfop**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| MO | 1280 | Cattle kidney | 1 | | | 4 | |
| MO | 1281 | Cattle liver | 0.5 | | | 4 | |
| MM | 0812 | Cattle meat | 0.05 | | | 4 | |
| ML | 0812 | Cattle milk | 0.3 | | | 4 | |

**APPENDIX VII**

## PROPOSED DRAFT AND DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

**(Returned to Step 6)**

| | Commodity | | MRL (mg/kg) | Source | Step | Note |
|---|---|---|---|---|---|---|
| **8** | **Carbaryl** | | | | | |
| FS | 0013 | Cherries | 20 | | 6 | |
| **157** | **Cyfluthrin/beta-cyfluthrin** | | | | | |
| VB | 0400 | Broccoli | 2 | | 6 | |
| VB | 0041 | Cabbages, Head | 4 | | 6 | |

**APPENDIX VIII**

## DRAFTS CODEX MAXIMUM RESIDUE LIMITS FOR PESTICIDES WITHDRAWN

| | Commodity | | MRL (mg/kg) | | Step | Note |
|---|---|---|---|---|---|---|
| **8** | **Carbaryl** | | | | | |
| JF | 0001 | Citrus juice | 0.5 | | W | |
| AB | 0001 | Citrus pulp, Dry | 4 | | W | |
| DF | 0269 | Dried grapes (=currants, raisins and sultanas) | 50 | | W | |
| JF | 0269 | Grape juice | 30 | | W | |
| AB | 0269 | Grape pomace, Dry | 80 | | W | |
| FB | 0269 | Grapes | 40 | | W | |
| FS | 0012 | Stone fruits | 10 | | W | Except cherries |
| **27** | **Dimethoate** | | | | | |
| VL | 0482 | Lettuce, Head | 3 | | W | |
| VO | 0445 | Peppers, Sweet | 5 | Po | W | |
| **94** | **Methomyl** | | | | | |
| VB | 0040 | Brassica (cole or cabbage) vegetables, Head cabbages, Flowerhead brassicas | 7 | | W | |
| VS | 0624 | Celery | 3 | | W | |
| VC | 0045 | Fruiting vegetables, cucurbits | 0.1 | | W | |
| FB | 0269 | Grapes | 7 | | W | |
| VL | 0053 | Leafy vegetables | 30 | | W | |
| **95** | **Acephate** | | | | | |
| VB | 0042 | Flowerhead brassicas | 2 | | W | |
| FC | 0003 | Mandarins | 7 | | W | |
| FS | 0245 | Nectarine | 2 | | W | |
| FS | 0247 | Peach | 2 | | W | |
| VO | 0051 | Peppers | 5 | | W | |
| FP | 0009 | Pome fruits | 7 | | W | |
| **96** | **Carbofuran** | | | | | |
| VC | 4199 | Cantaloupe | 0.2 | | W | |
| VC | 0424 | Cucumber | 0.3 | | W | |
| VR | 0589 | Potato | 0.2 | | W | |
| VC | 0431 | Squash,summer | 0.3 | | W | |
| VO | 0447 | Sweet corn (corn-on-the-cob) | 0.1 | | W | |
| **100** | **Methamidophos** | | | | | |
| VB | 0042 | Flowerhead brassicas | 0.5 | | W | |
| FC | 0003 | Mandarins | 0.5 | | W | |
| FS | 0245 | Nectarine | 0.5 | | W | |
| FS | 0247 | Peach | 0.5 | | W | |
| VO | 0051 | Peppers | 2 | | W | |
| FP | 0009 | Pome fruits | 0.5 | | W | |
| **145** | **Carbosulfan** | | | | | |
| VR | 0589 | Potato | 0.05 | | W | |

**232 Prothioconazole**

| | | | | |
|---|---|---|---|---|
| CF | 1211 | Wheat flour | 0.05 | W |

**APPENDIX IX**

PROPOSED DRAFT REVISION OF THE CODEX CLASSIFICATION OF FOODS AND ANIMAL FEEDS - Proposals for Eight Commodity Groups: **Bulb Vegetables*;* Fruiting Vegetables, other than cucurbits*;* Berries and other Small Fruits*;* Edible Fungi*;* Citrus Fruits*;* Pome Fruits*;* Stone Fruits*; and* Oilseeds**

*(For adoption at Step 5)*

***Bulb vegetables***

CLASS A

**Type 2 Vegetables Group 009 Group Letter Code VA**

Bulb vegetables are pungent highly flavoured foods derived from fleshy scale bulbs (in some commodities including stem and leaves), of the genera Allium of the familia Alliaceae and Lilium of the family Liliaceae.

The subterranean parts of the bulbs and shoots are protected from direct exposure to pesticides during the growing season.

The entire bulb may be consumed after removal of the parchment-like skin. The leaves and stems of some species or cultivars may also be consumed.

Bulb onions are bulb vegetables with mature bulbs. The entire bulb may be consumed after removal of the parchment-like skin.

Green onions are bulb vegetables with immature bulbs. Immature bulbs may be consumed and also leaves and stems of some species of cultivars may also be consumed.

Group 009A Bulb onions: Mature bulbs (dry)

Group 009B Green onions: immature bulbs including leaves stems and flowers

Portion of the commodity to which the MRL applies (and which is analysed): **Bulb onions: Whole commodity after removal of roots and adhering soil and whatever parchment skin is easily detached. Green onions: Whole vegetable after removal of roots and adhering soil.**

***Group 009 Bulb vegetables***

| **Code No.** | **Commodity** |
|---|---|
| VA 0035 | **Bulb vegetables** |

**Group 009A, Bulb onions**

| **Code No.** | **Commodity** |
|---|---|
| VA 2031 | **Bulb Onions** |
| | (includes all commodities in this subgroup) |
| VA 2600 | **Daylily** |

*Hemerocallis fulva* (L.) L.; *H minor* Mill; *H. citrina* Baroni; *H. lilioasphodelus* L.

VA 2601 **Fritillaria (bulb)**

*Fritillaria camchatcensis* (L.) Ker. Gawl.

VA 0381 **Garlic**

*Allium sativum* L.

VA 0382 **Garlic, Great-headed**

*Allium ampeloprasum* L., var. *ampeloprasum*

VA 2602 **Garlic, Serpent**

*Allium sativum* var. *ophioscorodon* (Link) Döll

VA 2603 **Lily**

*Lilium* spp.

VA 0385 **Onion, Bulb**

*Allium cepa* L. var. *cepa*, various cultivars

VA 0386 **Onion, Chinese**

*Allium chinense* G. Don.;

syn*: A. bakeri* Regel

- **Rakkyo**, see Onion, Chinese VA 0386

VA 0388 **Shallot**

*A. cepa* L., var. *aggregatum* Don.

VA 0390 **Silverskin onion**

*Allium cepa* L.

## Group 009B, Green onions

| Code No. | Commodity |
|---|---|
| VA 2032 | **Green Onions** |
| | (includes all commodities in this subgroup) |
| VA 2605 | **Chives** |
| | *Allium schoenoprasum* L. |
| VA 2606 | **Chives, Chinese** |
| | *Allium tuberosum* Rottler ex Spreng. |
| VA 2607 | **Elegans hosta** |
| | *Hosta sieboldiana* (Hook.) Engl. |
| VA 2608 | **Fritillaria (green)** |
| | *Fritillaria camchatcensis* (L.) Ker. Gawl. |
| VA 2609 | **Garlic chives** |
| | *Allium sativum* L. var. *sativum* |
| - | **Japanese bunching onion**, see Onion, Welsh, VA 0387 |
| VA 0383 | **Kurrat** |

*Allium kurrat* Schweinf. Ex K. Krause

VA 2610 **Lady's leek**

*Allium cernuum* Roth

VA 0384 **Leek**

*Allium porrum* L.;

syn: *A. ampeloprasum* L., var. *porrum* (L.) Gay

- **Multiplying onion**, see Onion, Welsh, VA 0387

VA 2611 **Onion, Beltsville bunching**

*Allium* x *proliferum* (Moench) Schrad.

syn: *Allium cepa* L. x *A. fistulosum* L.)

- **Onion, Egyptian**, see Tree onion, VA 0391

VA 2612 **Onion, fresh**

*Allium fistulosum* L. var. *caespitosum* Makino

- **Onion, green,** see Spring onion, VA 0389

VA 2613 **Onion, macrostem**

*Allium macrostemom* Bunge

VA 2614 **Onion, pearl**

*Allium porrum* L. var. *sectivum* Lueder

VA 2615 **Onion, potato**

*Allium cepa* var. *aggregatum* G. Don.

VA 0387 **Onion, Welsh**

*Allium fistulosum* L.

VA 0389 **Spring onion**

*Allium cepa* L., various cultivars, a.o. White Lisbon; White Portugal

VA 0391 **Tree onion**

*Allium* x *proliferum* (Moench) Schrad. ex Willd.; *Allium x wakegii* Araki

syn: *A. cepa* var. *proliferum* (Moench) Regel

syn: *A. cepa* L. var. *bulbiferum* L.H. Bailey

syn: *A. cepa* L. var. *viviparum* (Metz.) Alef.

VA 2616 **Wild leek**

*Allium tricoccum* Aiton

**Fruiting vegetables, other than Cucurbits**

CLASS A

**Type 2 Vegetables Group 012 Group Letter Code VO**

Group 012 Fruiting vegetables, other than Cucurbits are derived from the immature and mature fruits of various plants, usually annual vines or bushes. Many plants of this group belong to the botanical family Solanaceae.

This group does not include fruits of vegetables of the botanical family Cucurbitaceae or the pods of vegetables of the Leguminosae family.

The vegetables of this group are fully exposed to pesticides applied during the period of fruit development, except those of which the edible portion is covered by husks, such as ground cherries (Physalis spp.). The latter fruiting vegetables are protected from most pesticides by the husk except from pesticides with a systemic action.

The entire fruiting vegetable or the edible portion after discarding husks or peels may be consumed in a fresh form or after processing.

Three subgroups are defined:

Group 012 A Tomatoes

Group 012 B Peppers

Group 012 C Egg plants

Portion of the commodity to which the MRL applies (and which is analysed): **Whole commodity after removal of stems.**

***Group 012 Fruiting vegetables, other than Cucurbits***

| Code No. | Commodity |
|---|---|
| VO 0050 | **Fruiting vegetables, other than Cucurbits** |
| | (includes all commodities in this group) |

**Group 12A Tomatoes**

| Code No. | Commodity |
|---|---|
| VO 2045 | **Tomatoes** |
| | (includes all commodities in this subgroup) |
| - | **Alkekengi**, see Ground cherries, VO 0441 |
| | *Physalis alkekengi* L. |
| VO 0451 | **Bush tomato** |
| | *Solanum centrale* Black |
| - | **Cape gooseberry**, (Codex Stand. 226 – 2001), see Ground cherries, VO 0441 |
| | *Physalis peruviana* L. |
| VO 2700 | **Cherry tomato** |
| | *Lycopersicon esculentum* var. *cerasiforme* (Dunal) A. Gray |

| | |
|---|---|
| - | **Chinese lantern plant**, see Ground cherries, VO 0441 |
| VO 2701 | **Cocona**<br>*Solanum sessiliflorum* Dunal. |
| VO 2702 | **Currant tomato**<br>*Lycopersicon pimpinellifolium* (L.) Mill. |
| VO 2703 | **Garden huckleberry**<br>*Solanum scabrum* Mill. |
| VO 2704 | **Goji berry**<br>*Lycium barbarum* L. |
| - | **Golden berry**, see Ground cherries, VO 0441<br>*Physalis peruviana* L. |
| VO 0441 | **Ground cherries**<br>*Physalis alkekengi* L.; *Ph. ixocarpa* Brot. ex Horn.; *Ph. peruviana* L. |
| - | **Husk tomato**, see Ground cherries, VO 0441 |
| - | **Naranjilla**, see Group 006 Assorted tropical and sub-tropical fruits - inedible peel, FI 0349<br>*Solanum quitoense* Lam. |
| - | **Quito Orange**, see Naranjilla, FI 0349 |
| VO 2705 | **Strawberry tomato**, see Ground cherries, VO 0441 |
| VO 2706 | **Sunberry**<br>*Solanum retroflexum* Dunal. |
| VO 2707 | **Tomatillo**<br>*Physalis philadelphica* Lam.<br>Syn. *Physalis ixocarpa* auct. |
| VO 0448 | **Tomato**<br>*Lycopersicon esculentum* Mill.;<br>syn: *Solanum lycopersicum* L. |
| - | **Tree tomato**, see Group 06 Assorted tropical and sub-tropical fruits – inedible peel , FT 0312 |

**Group 12B Peppers**

| | |
|---|---|
| VO 0051 | **Peppers**<br>(includes all commodities in this subgroup) |
| - | **Bird chili peppers**, see Peppers, Chili<br>*Capsicum Frutescens L.* |
| - | **Cherry pepper**, see Peppers, Chili, VO 0444<br>*Capsicum annuum* L., var. *acumimata* Fingerh. |
| - | **Chili peppers**, see Peppers, Chili, VO 0444 |

**Cluster pepper**, see Peppers, Chili, VO 0444

*Capsicum annuum* L., var. *fasciculatum* (Sturt.) Irish

- **Cone pepper**, see Peppers, Chili, VO 0444

[- **Lady's finger**, see Okra, VO 0442]

VO 2709 **Martynia**

*Proboscidea louisianica* (Mill.) Thell.

[VO 0442 **Okra**

*Abelmoschus esculentus* (L.) Moench.]

- **Paprika**, see Peppers, Sweet, VO 0445

- **Pimento or Pimiento**, see Peppers, Sweet, VO 0445

- **Peppers, bell,** see Peppers, Sweet, VO 0445

VO 0444 **Peppers, Chili**

*Capsicum annuum* L.; several pungent cultivars

- **Peppers, Long**, see Peppers, Sweet, VO 0445

*Capsicum annuum* L., var. *longum* (D. C.) Sendt.

VO 0445 **Peppers, Sweet** (including pimento or pimiento)

*Capsicum annuum*, var. *grossum* (L.) Sendt. and var. *longum* (D. C.) Sendt.

[VO 0446 **Roselle**

*Hibiscus sabdariffa* L., var. *sabdariffa* L.]

**Group 12C Egg plants**

VO 2046 **Egg plants**

(includes all commodities in this subgroup)

VO 2711 **African Eggplant**

*Solanum macrocarpon* L.

- **Aubergine**, see Egg plant, VO 0440

VO 0440 **Egg plant**, various cultivars

*Solanum melongena* L.

- **Melon pear**, see Pepino, VO 0443

VO 2712 **Pea Eggplant**

*Solanum torvum* Swartz

[VO 0443 **Pepino**

*Solanum muricatum* L.]

VO 2713 **Scarlet Eggplant**

*Solanum aethiopicum* L.

VO 2714 **Thai eggplant**

*Solanum undatum* Jacq. Non Lam.

[VO 0443 **Tree melon**, see Pepino]

***Berries and other small fruits***

CLASS A

**Type 1 Fruits Group 004 Group Letter Code FB**

Berries and other small fruits are derived from a variety of perennial plants and shrubs having fruit characterized by a high surface: weight ratio. The fruits are fully exposed to pesticides applied during the growing season (blossoming until harvest).

The entire fruit, often including seed, may be consumed in a succulent or processed form.

Five subgroups are defined:

Group 004 A Caneberries: includes berries originating from canes that are erect or trailing, mainly Rubus species

Group 004 B Bushberries: includes berries origination from woody shrubs

Group 004 C Large shrub/tree berries: includes berries origination from large shrubs or trees

Group 004 D Small fruit vine climbing: includes berries origination from climbing vines

Group 004 E Low growing berries: includes berries origination from low growing berries that are short shrubs or herbaceous plants

Portion of commodity to which the MRL applies (and which is analysed): **Whole commodity after removal of caps and stems. Currants, Black, Red, White: fruit with stem.**

***Group 004 Berries and other small fruits***

| **Code No.** | **Commodity** |
|---|---|
| FB 0018 | **Berries and other small fruits** |

**Subgroup 004A Cane berries**

| **Code No.** | **Commodity** |
|---|---|
| FB 2005 | **Cane berries,** (*Rubus* species) |
| FB 0264 | **Blackberries** |
| | *Rubus fruticosus* auct. aggr., several ssp. |
| - | **Boysenberry**, see Dewberries, FB 0266 |
| | Hybrid of *Rubus* spp. |
| FB 0266 | **Dewberries** (including Boysenberry and Loganberry) |
| | *Rubus ceasius* L.; several *Rubus* ssp. and hybrids |
| - | **Korean Black Raspberry**, see Raspberries, Red, Black FB 0272 |

*Rubus coreanus* Miquel.

- **Korean Raspberry**, see Raspberries, Red, Black FB 0272

*Rubus crataegifolius* Bunge

- **Loganberry**, see Dewberries, FB 0266

*Rubus loganobaccus* L.H. Bailey, hybrid of *Rubus* spp.

- **Olallie berry**, see Dewberries, FB 0266

FB 0272 **Raspberries, Red, Black**

*Rubus idaeus* L.; *Rubus occidentalis* L. ; several Rubus spp. and hybrids, including wild rasp berries *Rubus molluccanus* L.

- **Youngberry**, see Dewberries, FB 0266

*Rubus ursinus* cv. Young

**Subgroup 004B Bush berries**

| Code No. | Commodity |
|---|---|
| FB 2006 | **Bush berries** |
| FB 0019 | **Vaccinium berries**, including Bearberry |
| | *Vaccinium* spp.; *Arctostaphylos uva-ursi* (L.) Spreng. |
| FB 0020 | **Blueberries** |
| | *Vaccinium corymbosum* L.; *Vaccinium angustifolium* Ait.; |
| | *Vaccinium virgatum* Aiton; *Gaylussacia* spp. |
| FB 2240 | **Aronia berries** |
| | *Aronia spp* |
| FB 0260 | **Bearberry** |
| | *Arctostaphylos uva-ursi* (L.) Spreng. |
| FB 0261 | **Bilberry** |
| | *Vaccinium myrtillus* L. |
| FB 0262 | **Bilberry**, **Bog** |
| | *Vaccinium uliginosum* L. |
| FB 0263 | **Bilberry, Red** |
| | *Vaccinium vitis-idaea* L. |
| - | **Blueberry, Highbush**, see Blueberries, FB 0020 |
| | *Vaccinium corymbosum* L. |
| - | **Blueberry, Lowbush**, see Blueberries, FB 0020 |
| | *Vaccinium angustifolium* Ait. |
| - | **Blueberry, Rabbiteye**, see Blueberries, FB 0020 |
| | *Vaccinium virgatum* Aiton |
| FB 2241 | **Buffalo currant** |
| | *Ribes aureum* var. *villosum* DC. (Syn: *Ribes odoratum* H.Wendl) |

| | |
|---|---|
| FB 2242 | **Chilean guava**<br>*Ugni molinae* Turcz. (syn: *Myrtus ugni* Mol.) |
| - | **Cowberry**, see Bilberry, Red, FB 0263 |
| FB 0021 | **Currants**, **Black, Red, White**<br>*Ribes nigrum* L.; *R. rubrum* L. |
| FB 0278 | **Currant, Black**, see also Currants, Black, Red, White<br>*Ribes nigrum* L. |
| FB 0279 | **Currant, Red, White**, see also Currants, Black, Red, White<br>*Ribes rubrum* L. |
| FB 0268 | **Gooseberry**<br>*Ribes uva-crispa* L. (syn: *R. grossularia* L.) |
| FB 2243 | **European barberry**<br>*Berberis vulgaris* L. |
| - | **European Blueberry**, see bilberry FB 0261 |
| FB 2244 | **Huckleberries**<br>1. Blueberries, see above FB 0020<br>2. *Gaylussacia* spp., see Blueberries FB 0020<br>Red Huckleberry (*Vaccinium parvifolium* L.) |
| FB 2245 | **Jostaberries**<br>*Ribes x nidigrolaria* Rud. Bauer & A. Bauer |
| FB 0270 | **Juneberries**<br>*Amelanchier spp*. |
| FB 2246 | **Native currant**<br>*Acrotriche depressa* R. Br. |
| FB 2247 | **Riberries**<br>*Syzygium leuhmannii* |
| FB 0273 | **Rose hips**<br>*Rosa* L., several spp. |
| FB 2248 | **Salal**<br>*Gaultheria shallon* Pursh |
| FB 2249 | **Sea buckthorn**<br>*Hippophea rhamnoides* L. |
| - | **Whortleberry, Red**, see Bilberry, Red, FB 0263 |

**Subgroup 004C** **Large shrub/tree berries**

| **Code No.** | **Commodity** |
|---|---|
| FB 2007 | **Large shrub/tree berries** |

| | |
|---|---|
| FB 2250 | **Bayberries** |
| | *Morella spp.* |
| FB 2251 | **Buffaloberry** |
| | *Shepherdia argentea* (Pursh) Nutt. |
| FB 2252 | **CHE** |
| | *Maclura tricuspidata* Carrièra |
| FB 0267 | **Elderberries** |
| | *Sambucus* spp. |
| FB 0271 | **Mulberries** |
| | *Morus alba* L.; *Morus nigra* L.; *Morus rubra* L. |
| FB 2253 | **PHALSA** |
| | *Grewia asiatica* L. |
| - | **Rowan,** see Service berries FB 0274 |
| | *Sorbus aucuparia* L. |
| FB 0274 | **Service berries** |
| | 1. see Juneberries |
| | 2. *Sorbus torminalis* (L.) Crantz; *Sorbus domestica* L. *S. aucuparia* L. |

**Subgroup 004D Small fruit vine climbing**

| Code No. | Commodity |
|---|---|
| FB 2008 | **Small fruit vine climbing** |
| FB 2255 | **ARGUTA KIWIFRUIT** |
| | *Actinidia arguta* (Siebold & Zucc.) Planch. ex. Miq. |
| FB 2256 | **Amur river grape** |
| | *Vitus amurensis* Rupr. |
| FB 0269 | **Grapes** |
| | *Vitis vinifera* L., several cultivars |
| FB 2257 | **SCHISANDRABERRY** |
| | *Schisandra chinensis* (Turcz.) Baill. |
| FB 1235 | **Table-grapes** |
| | Special cultivars of *Vitis vinifera* L., suitable for direct human consumption |
| - | **Tara vine**, see Arguta kiwifruit FB 2255 |
| FB 1236 | **Wine-grapes** |
| | Special cultivars of *Vitis vinifera* L., suitable for preparing juice and fermenting into wine |

**Subgroup 004E Low growing berries**

| Code No. | Commodity |
|---|---|
| FB 2009 | **Low growing berries** |
| - | **Bakeapple**, see Cloudberry FB 0277 |
| FB 0265 | **Cranberry** |
| | *Vaccinium macrocarpon* Aiton |
| FB 0277 | **Cloudberry** |
| | *Rubus chamaemorus* L. |
| FB 2258 | **Muntries** |
| | *Kunzea pomifera* F. Muell. |
| FB 2259 | **Partridge berry** |
| | *Mitchella repens* L. |
| - | **Squaw vine**, see Partridge berry FB 2259 |
| FB 0275 | **Strawberry** |
| | *Fragaria x ananassa* Duchene ex Rozier |
| FB 0276 | **Strawberries, Wild** |
| | *Fragaria vesca* L.; *Fragaria moschata* Duchene |
| - | **Strawberry , Musky**, see Strawberries wild, FB 0276 |
| | *Fragaria moschata* Duchene |

*Edible fungi*

CLASS A

**Type 1 Vegetables Group 18 Group Letter Code VF**

Edible Fungi are derived from lower plants. The fruiting bodies could be fully exposed to pesticides during the growing season.

The entire fruiting body may be consumed in a succulent or processed form.

Portion of commodity to which the MRL applies (and which is analysed): **Whole commodity after removal of soil and growing medium**

***Group 18 Edible Fungi***

| Code No. | Commodity |
|---|---|
| VF 2084 | **Edible fungi** |
| | Various edible species of fungi, wild and cultivated. |
| VF 0449 | **Fungi, Edible, except Mushrooms** |

According to Codex Stand. 38-1981: various edible species of fungi, mainly wild, among others *Boletus edulis*; other *Boletus* spp, *Morchella* spp, *Pleurotus ostreatus*

VF 0450 **Mushrooms**

Cultivated cultivars of *Agaricus spp*. (included Royal sun agaricus = Hime-Matsutake (*Agaricus brasiliensis*), Rodman's agaricus, White button mushroom)

syn: Psalliota spp., mainly *Agaricus bisporus* (definition Codex Stand. 55-1981)

- **Bearded tooth**, see Pom pom VF 3065

- **Beech mushroom**, see Bunashimeji VF 3052

VF 3050 **Black poplar mushroom**

*Agrocybe aegerita* (V. Brig.) Singer

VF 3051 **BLEWITT**

*Lepista nuda* (Bull.) Cooke

VF 3052 **Bunashimeji**

*Hypsizygus marmoreus* (Peck) H.E. Bigelow, *H. tessulatus* (Bull.) Singer

VF 3053 **Cauliflower mushroom**

*Sparassis crispa* (Wulfen) Fr.

VF 3054 **Cep**

*Boletus edulis* Bull. and other *Boletus spp.*

VF 3055 **Chanterelle**

*Cantharellus cibarius* Fr. (Codex Stand. 40-1981)

VF 3056 **Enoke**

*Flammulina velutipes* (curtis) Singer

- **Enoki mushroom,** see Enoke VF 3056

- **Hen-of-the-Woods mushroom**, see Maitake, VF 3059

VF 3057 **Hirmeola**

*Auricularia auricular-judea* (Fr.) J. Schröt (Syn. *Auricularia auricular* (Hook.f.)Underw.)

VF 3058 **Ink mushroom**

*Coprinus comatus* (O.F. Müll.) Persoon

- **Jews ear mushroom**, see Hirmeola VF 3057

- **Lion's mane mushroom**, see Pom pom VF 3065

VF 3059 **Maitake**

*Grifola frondosa* (Dicks) Gray

VF 3060 **MOREL**

*Morchella spp.*

VF 3061 **Nameko**

*Pholiota nameko* (T. Ito) S. Ito & S. Imai and other *Pholiota* spp.

VF 3062 **Net bearing Dictyophora**

*Phallus impudicus* L.

- **Oakwood mushroom**, see Shiitake mushroom VF 3067

VF 3063 **Oyster mushroom**

*Pleurotus ostreatus* (Jacq.) P. Kumm and other *Pleurotus spp*., including grey-oyster mushroom, abalone mushroom

- **Paddy straw mushroom**, see Straw mushroom VF 3059

VF 3064 **Pine mushroom**

*Tricholoma matsutake* (S. Ito & Imai) Singer

VF 3065 **Pom pom**

*Hericum erinaceus* (Bull.) Pers.

VF 3066 **REISHI MUSHROOM**

*Ganoderma lucidum* (Curtis) P. Karst. and other *Ganoderma* spp.

VF 3067 **Shiitake mushroom**

*Lentinula edodes* (Berk.) Pegler

VF 3068 **Shimeji**

*Lyophyllum fumosum* (Pers.) P.D. Orton (syn: *Tricholoma conglobatum*(Vitt.) Ricken) and other *Lyophyllum* spp.

- **Slimy mushroom**, see Nameko VF 3061

VF 3069 **STRAW MUSHROOM**

*Volvariella volvacea* (Bull.) Singer

VF 3070 **Stropharia**

*Stropharia spp.*

*Stropharia rugosoannulata* Farl. ex Murrill

VF 3071 **TRUFFLE**

*Tuber spp.*

VF 3072 **Wangsongi**

Macrocybe gigantea (Massee) Pegler & Lodge

(syn : *Tricholoma giganteum* Massee)

- **Winter mushroom**, see Enoke VF 3056

VF 3073 **White jelly mushroom**

*Tremella fuciformis* Berk.

VF 3074 **Wood ears mushroom**,

*Auricularia polytricha* (Mont.)Sacc.

***Citrus fruits***

CLASS A

**Type 1 Fruits Group 001 Group Letter Code FC**

Citrus fruits are produced on trees or shrubs of the family Rutaceae. Aromatic oily peel, globular form and interior segments of juice-filled vesicles characterize these fruits. The fruit is fully exposed to pesticides during growing season. Post-harvest treatments with pesticides and liquid waxes are often carried out to avoid deterioration during transport and distribution due to fungal diseases, insect pests or loss of moisture.

The fruit pulp may be consumed in succulent form and as juice. The entire fruit may be used for preserves.

Group 001A Lemons and Limes: Hybrids and related species similar to lemons and limes

Group 001B Mandarins: Hybrids and related species similar to mandarins

Group 001C Oranges, Sweet, Sour: Hybrids and related species similar to oranges

Group 001D Pummelos: Hybrids and related species

Portion of the commodity to which the MRL applies (and which is analyzed): **Whole commodity.**

***Group 001 Citrus fruits***

| **Code No.** | **Commodity** |
|---|---|
| FC 0001 | **Citrus Fruit** |

**Subgroup 001A Lemons and Limes**

| **Code No.** | **Commodity** |
|---|---|
| FC 0002 | **Lemons and Limes** (including Citron)<br>- *Citrus limon* Burm.f.;<br>- *Citrus aurantiifolia* Swingle;<br>- *Citrus medica* L.;<br>Hybrids and related species similar to lemons and limes including *Citrus jambhiri* Lush *Citrus limetta* Risso; *Citrus limettoides* Tan.; *Citrus limonia* Osbeck.<br>Synonyms: see specific fruit species |
| FC 2201 | **Australian blood lime**, see also Lemons and Limes, FC 0002<br>*Microcitrus australasica* (F. Muell.) Swingle<br>synonyms: *Citrus australasica* F. Muell. |
| FC 2202 | **Australian desert lime**, see also Lemons and Limes, FC 0002<br>*Eremocitrus glauca* (Linl.) Swingle<br>synonyms: *Citrus glauca* (Lindl) Burkill |
| FC 2203 | **Australian round lime**, see also Lemons and Limes, FC 0002<br>*Microcitrus australis* (A. Cunn. ex Mudie) Swingle |

synonyms: *Citrus australis* (A. Cunn. ex Mudie*) Planch.*

FC 2204 **Brown River finger-lime**, see also Lemons and Limes, FC 0002

*Microcitrus papuana* Winters

*Citrus wintersii* Mabb.

FC 0202 **Citron**, see also Lemons and Limes, FC 0002

*Citrus medica* L.;

syn: *Citrus cedra* Link; *Citrus cedratus* Raf.;

*Citrus medica genuina* Engl.; *Citrus medica* proper Bonavia

FC 0204 **Lemon**, see also Lemons and Limes, FC 0002

*Citrus limon* Burm. f.;

syn: *Citrus medica limon* L.; *Citrus limonum* Risso; *Citrus medica limonum* Hook. F.; *Citrus jambhiri* Lush.

FC 0205 **Lime**, see Codex stan. 217-1999, Amd. 1-2005, see also Lemons and Limes, FC 0002

*Citrus aurantiifolia* Swingle;

syn: *Limonia aurantiifolia* Christm.; *L. acidissima* Houtt. *Citrus lima* Lunan.; *Citrus acida* Roxb.; *Citrus limonellus* Hassk.

FC 2205 **Lime, Sweet**, see also Lemons and Limes, FC 0002

*Citrus limetta* Risso

syn: *Citrus limettioides* Tan., *Citrus lumia* Risso)

- **Mexican Lime**, see Codex stan. 217-1999, see Lime, FC 0205

*Citrus aurantifolia* Swingle see, Amd. 1-2005

FC 2206 **Mount White-lime**, see also Lemons and Limes, FC 0002

*Microcitrus garrowayae* (F. M. Bailey) Swingle

FC 2207 **New Guinea wild lime**, see also Lemons and Limes, FC 0002

*Microcitrus warburgiana* (F. M. Bailey) Tanaka

FC 2208 **Russell River-lime**, see also Lemons and Limes, FC 0002

*Microcitrus inodora* (F. M. Bailey) Swingle

syn: *Citrus inodora (*F. M. Bailey)

FC 2209 **Tahiti Lime**, see Codex stan. 213-1999, Amd. 3-2005,

see also Lemons and Limes, FC 0002

*Citrus latifolia* Tan.

FC 2210 **Yuzu**, see also Lemons and Limes, FC 0002

*Citrus junos* Siebold ex Tanaka

**Subgroup 001B Mandarins**

| **Code No.** | **Commodity** |
|---|---|
| FC 0003 | **Mandarins** (including Mandarin-like hybrids) |
| | - *Citrus reticulata* Blanco: |

Hybrids and related species including *Citrus nobilis* Lour.:

*Citrus deliciosa* Ten.; *Citrus tangarina* Hort.; *Citrus mitis* Blanco

syn: *Citrus madurensis* Lour.; *Citrus unshiu* Marcow;

synonyms: see specific fruit species Mandarin

FC 0201 **Calamondin**, see also Mandarins, FC 0003

*Citrus mitis* Blanco;

syn: *Citrus madurensis* Lour. (hybrid of *Citrus reticulata* Blanco.

var. *austera* Swing x *Fortunella* sp.)

- **Clementine**, see Mandarins, FC 0003

*Citrus clementina* Hort. Ex Tanaka cultivar of *Citrus reticulata Blanco* (possibly natural hybrid of Manderin x Orange, Sweet)

- **Cleopatra mandarin**, see Mandarins, FC 0003

*Citrus reshni* Hort. Ex Tan.

- **Dancy** or **Dancy mandarin**, see Mandarins, FC 0003

*Citrus tangerina* Hort.

- **King mandarin**, see Mandarins, FC 0003

*Citrus nobilis* Lour. (= hybrid of Mandarin x Orange, Sweet)

FC 0206 **Mandarin**, see also see Mandarins, FC 0003

*Citrus reticulata* Blanco;

syn: *Citrus nobilis* Andrews (non Lour.); *Citrus poonensis* Hort. Ex Tanaka; *Citrus chrysocarpa* Lush.

- **Mediterranean mandarin**, see Mandarins, FC 0003

*Citrus deliciosa* Ten (= hybrid of Mandarin x Orange, Sweet)

- **Satsuma** or **Satsuma mandarin**, see Mandarins, FC 0003

*Citrus unshiu* Marcow.

- **Tangelo**, small and medium sized cultivars, see Mandarins, FC 0003

Hybrids of Mandarin x Grapefruit or Mandarin x Shaddock

- **Tangerine**, see Mandarins, FC 0003

*Citrus reticulata* Blanco;

Syn: *Citrus tangarina* Hort. Ex Tan. *Citrus ponnensis* Hort., *Citrus Chyrosocarpa* Lush., *Citrus Reshni* Hort.

- **Tangors**, see Mandarins, FC 0003

*Citrus nobilis* Lour. (= Hybrid of Mandarin x Orange, sweet) ;

- **Tankan mandarin**, see Mandarins, FC 0003

*Citrus reticulate* Blanco *tankan* Hyata (= probably hybrid of Mandarin x Orange, Sweet)

FC 2211 **Unshu orange,** see also Mandarins, FC 0003

*Citrus reticulata Blanco* ssp. *unshiu (*Marcow.*)* D.Rivera Núñez et al.

- **Willowleaf mandarin**, see Mandarins, FC 0003

*Citrus deliciosa* Ten. (= hybrid of Mandarin and Orange, sweet)

**Subgroup 001C Oranges, Sweet, Sour**

| Code No. | Commodity |
|---|---|
| FC 0004 | **Oranges, Sweet, Sour** (including Orange-like hybrids) |
| | several cultivars: |
| | - *Citrus sinensis* Osbeck; |
| | - *Citrus aurantium* L.; |
| | Hybrids and related species: |
| | *Citrus myrtifolia* Raf.; *Citrus salicifolia* Raf.; |
| | synonyms: see specific fruit species |
| - | **Bergamot**, see Oranges, Sweet, Sour, FC 0004 |
| | *Citrus aurantium* ssp *bergamia* |
| - | **Bigarade**, see Orange, Sour FC 0207 |
| | *Citrus aurantium* L. |
| - | **Blood orange**, see Orange, Sweet, FC 0208 |
| | Cultivar of *Citrus sinensis* Osbeck |
| - | **Chinotto**, see Orange, Sour, FC 0207 |
| | *Citrus aurantium* L., var. *myrtifolia* Ker-Gawler; |
| | syn: *Citrus myrtifolia* Raf. |
| - | **Chironja** (**orangelo**), see Oranges, Sweet, Sour, FC 0004 |
| | *Citrus sinensis* x *Citrus paradise* (= Hybrid of Orange, Sweet x Mandarin) |
| | Ichang Bitter Orange, see Orange, Sweet, FC 0208 |
| | *Citrus ichangensis* Swingle |
| - | **Malta orange**, see Blood Orange |
| - | **Myrtle-leaf orange**, see Chinotto |
| - | **Orange**, **Bitter**, (=bigarade) see Orange, Sour FC 0207 |
| FC 0207 | **Orange, Sour**, see also see Oranges, Sweet, Sour, FC 0004 |
| | *Citrus aurantium* L.; |
| | syn: *Citrus vulgaris* Risso; *Citrus bigarradia* Loisel; *Citrus communis* Le Maout & Dec. |
| FC 0208 | **Orange, Sweet**, See Codex stan. 245-2004 Amd 1-2005, see also see Oranges, Sweet, Sour, FC 0004 |
| | *Citrus sinensis* Osbeck; |
| | syn: *Citrus aurantium sinensis* L.; *Citrus dulcis* Pers.; *Citrus aurantium vulgare* Risso & Poit.; *Citrus aurantium dulce* Hayne |
| - | **Seville Orange**, see Orange, Sour, FC 0207 |
| - | **Tachibana orange** see Oranges, Sweet, Sour, FC 0004 |
| | *Citrus tachibana* (Makino) Tanaka |

Syn: *Citrus aurantium* L. var. *tachibana* Makino; *Citrus depressa*

FC 2212 **Trifoliate orange** see also Oranges, Sweet, Sour, FC 0004

*Poncirus trifoliate* (L.) Raf.

**Subgroup 001D Pummelos**

| Code No. | Commodity |
|---|---|
| FC 0005 | **Pummelo and Grapefruits** (including Shaddock-like hybrids, among others Grapefruit) |
| | *Citrus maxima* (Burm.) Merr. |
| | Syn: *Citrus Grandis* L. Osbeck; *Citrus paradisi* Macf.; *Citrus decumana* L. |
| | Hybrids and related species, similar to Shaddocks, including *Citrus natsudaidai* Hayata; Tangelos large sized (= hybrid, Grapefruit x Mandarin); Tangelolos: (hybrid, Grapefruit x Tangelo): synonyms: see specific fruit species |
| FC 0203 | **Grapefruit**, see Codex stan. 219-1999 Amd 2-2005, see also Pummelo and Grapefruits, FC 0005 |
| | Hybrid of Shaddock x Orange, Sweet |
| | *Citrus paradisi* Macf.; |
| | syn: *Citrus maxima uvacarpa* Merr. & Lee. |
| - | **Natsudaidai**, see Pummelo and Grapefruits, FC 0005 |
| | *Citrus natsudaidai* Hayata (possibly natural hybrid of Mandarin x Shaddock) |
| - | **Pomelo**, see Pummelo and Grapefruits, FC 0005 |
| FC 0209 | **Pummelo**, see Codex stan. 214-1999, Amd 2-2005, see Pummelo and Grapefruits, FC 0005 |
| | *Citrus maxima* (Burm.) Merr. |
| | syn: *Citrus grandis* L. Osbeck; *Citrus aurantium decumana* L.; *Citrus decumana* Murr. |
| - | **Shaddock**, see also Pummelo and Grapefruits, FC 0005 |
| | *Citrus maxima* (Burm.) Merr.; |
| - | **Tangelo**, large-sized cultivars, see Pummelo and Grapefruits, FC 0005 |
| - | *Citrus x tangelo* J.W. Ingram & H.E. Moore; |
| - | **Tangelolo**, see Pummelo and Grapefruits, FC 0005 |
| | Hybrids of Grapefruit x Tangelo |
| - | **Ugli/Uniq fruit (=tangelo**), see Pummelo and Grapefruits, FC 0005 |
| | Cultivar of Tangelo, large sized fruit cultivar, see there |
| | *Citrus reticulate x Citrus paradisi* |

***Pome fruits***

**CLASS A**

**Type 1 Fruits Group 002 Group Letter Code FP**

Pome fruits are produced on trees and shrubs belonging to certain genera of the rose family (Rosaceae), especially the genera Malus and Pyrus. They are characterized by fleshy tissue surrounding a core consisting of parchment-like carpels enclosing the seeds.

Pome fruits are fully exposed to pesticides applied during the growing season. Post-harvest treatments directly after harvest may also occur. The entire fruit, except the core, may be consumed in the succulent form or after processing.

Portion of the commodity to which the MRL applies (and which is analysed): **Whole commodity after removal of stems.**

***Group 002 Pome fruits***

| Code No. | Commodity |
|---|---|
| FP 0009 | **Pome fruits** |
| FP 0226 | **Apple** |
| | *Malus domestica* Borkhausen |
| [FP 2220 | **Azarole** |
| | *Crataegus azarolus* L.] |
| FP 2221 | **Chinese quince** |
| | *Chaenomeles speciosa* (sweet) Nakai |
| FP 0227 | **Crab-apple** |
| | *Malus* spp.; among other *Malus baccata* (L.) Borkh. var *baccata*; |
| | *M. prunifolia* (Willd.) Borkh. |
| - | **Japanese medlar**, see Loquat, FP 0228 |
| FP 0228 | **Loquat** |
| | *Eriobotrya japonica* (Thunberg ex J.A. Murray) Lindley |
| [FP 2222 | **Mayhaw** |
| | *Crataegus* spp.] |
| FP 0229 | **Medlar** |
| | *Mespilus germanica* L. |
| - | **Nashi pear**, see Pear, Oriental |
| FP 0230 | **Pear** |
| | *Pyrus communis* L.; *P. pyrifolia* (Burm.) Nakai; *P. bretschneideri* Rhd.; *P. sinensis* L. |
| - | **Pear, Oriental**, see Pear, FP 0230 |
| | *Pyrus pyrifolia* (Burm.) Nakai |

FP 0231 **Quince**

*Cydonia oblonga* P. Miller;

syn: *Cydonia vulgaris* Persoon

- **Sand pear**, see Pear, Oriental

[FP 2223 **Tejocote**

*Crataegus mexicana* DC.]

***Stone fruits***

CLASS A

**Type 1 Fruits Group 003 Group Letter Code FS**

Stone fruits are produced on trees belonging to the genus Prunus of the rose family (Rosaceae). They are characterized by fleshy tissue surrounding a single hard shelled seed. The fruit is fully exposed to pesticides applied during the growing season (from fruit setting until harvest). Dipping of fruit immediately after harvest, especially with fungicides, may also occur.

The entire fruit, except the seed, may be consumed in a succulent or processed form.

Group 003 A Cherries: Cherry and related species of *Prunus,* which produce stone fruits similar to cherry

Group 003 B Plums: Plum and related species of *Prunus,* which produce stone fruits similar to plum

Group 003 C Peaches: Peach, nectarine and apricot and related species of *Prunus,* which produce stone fruits similar to peach, nectarine and apricot.

Portion of the commodity to which the MRL applies (and which is analysed): **Whole commodity after removal of stems and stones, but the residue calculated and expressed on the whole commodity without stem.**

***Group 003 Stone fruits***

| **Code No.** | **Commodity** |
|---|---|
| FS 0012 | **Stone fruits**<br>*Prunus* spp. |

***Subgroup 003A Cherries***

| **Code No.** | **Commodity** |
|---|---|
| FS 0013 | **Cherries**<br>(includes all commodities in this subgroup) |
| - | **Capulin,** see Cherry, black<br>*Prunus serotina* Ehrh. subsp. *capuli* |
| FS 2230 | **Cherry, black** (including capulin)<br>*Prunus serotina* Ehrh. subsp. *Serotina;*<br>*Prunus serotina* Ehrh. subsp. *capuli* |
| FS 2231 | **Cherry, Nanking**<br>*Prunus tomentosa* Thunb. |

| | |
|---|---|
| FS 0243 | **Cherry, Sour**<br>*Prunus cerasus* L. |
| FS 0244 | **Cherry, Sweet**<br>*Prunus avium* L. |
| - | **Cherry, tart**, see Cherry, Sour |
| FS 2232 | **Choke cherry**<br>*Prunus virginiana* L. |
| - | **Morello,** see Cherry, Sour<br>*Prunus cerasus* L., var. *austera* L. |

***Subgroup 003B Plums***

| Code No. | Commodity |
|---|---|
| FS 0014 | **Plums** (including Prunes)<br>*Prunus domestica* L.; other *Prunus* spp and ssp.<br>(includes all commodities in this subgroup) |
| FS 0241 | **Bullace**<br>*Prunus insititia* L.;<br>syn: *Prunus domestica* L., ssp. *insititia* (L.) Schneider |
| FS 0242 | **Cherry plum**<br>*Prunus cerasifera* Ehrhart, syn: *P. divaricata* Ledeboer *P. salicina* Lindl., var. Burbank |
| - | **Chickasaw plum**, see Plum, Chickasaw |
| - | **Damsons (Damson plums)**, see Plum, Damson |
| - | **Greengages (Greengage plums)**, see Plum, Greengage |
| FS 2233 | **Klamath plum**,<br>*Prunus subcordata* Benth. |
| - | **Mirabelle**, see Plum, Mirabelle |
| - | **Myrobolan plum**, see Cherry plum |
| FS 2234 | **Plum**<br>*Prunus domestica* L. |
| - | **Plum, American**, see Sloe<br>*Prunus americana* Marshall |
| FS 2235 | **Plum, beach**<br>*Prunus maritime* Marshall |
| FS 0248 | **Plum, Chickasaw**<br>*Prunus angustifolia* Marsh.;<br>syn: *P. Chicasaw* Mich. |
| - | **Plum, Damson**, see Bullace |

- **Plum, Greengage**, see Plums

  *Prunus insititia* L., var. *italica* (Borkh.) L.M Neum.

- **Plum, Japanese**, see Plums

  *Prunus salicina* Lindley;

  syn: *P. triflora* Roxb.

- **Plum, Mirabelle**, see Bullace

  *Prunus insititia* L., var. *syriaca*;

  syn: *P. domestica* L., ssp *insititia* (L.) Schneider

FS 2236 **Plumcot**

*Prunus domestica x P. armeniaca*

- **Prunes**, see Plums

FS 0249 **Sloe**

*Prunus spinosa* L.; several wild *Prunus* spp.

***Subgroup 003A Peaches***

| Code No. | Commodity |
|---|---|
| FS 2001 | **Peaches** (including Nectarine and Apricots) |
| | (includes all commodities in this subgroup) |
| FS 0240 | **Apricot** |
| | *Prunus armeniaca* L.; |
| | syn: *Armeniaca vulgaris* Lamarck |
| FS 2237 | **Japanese apricot** |
| | *Prunus mume* Siebold & Zucc. |
| FS 0245 | **Nectarine** |
| | *Prunus persica* (L.) Batch, var. *nectarina* |
| FS 0247 | **Peach** |
| | *Prunus persica* (L.) Batsch; |
| | syn: *P. vulgaris* Mill. |

***Oilseed***

CLASS A

**Type 4 Nuts and seeds Group 023 Group Letter Code SO**

Oilseed consists of seeds from a variety of plants used in the production of edible vegetable oils, seed meals and cakes for animal feed. Some important vegetable oil seeds are by-products of fibre or fruit crops (e.g. cotton seed, olives).

Some of the oilseeds are, directly or after slight processing (e.g. roasting), used as food (e.g. peanuts) or for food flavouring (e.g. poppy seed, sesame seed).

Oilseeds are protected from pesticides applied during the growing season by the shell , husk of fruit flesh.

The group Oilseed is devided into five subgroups:

023A Rape seeds

023B Sunflower seeds

023C Cottonseed

023D Other oilsseeds

023E Oilfruits (fruits of palm trees)

Portion of the commodity to which the MRL applies (and which is analyzed): **Oilseeds: Unless specified, seed or kernels, after removal of shell or husk. Oilfruits: whole commodity**

***Group 023 Oilseed***

| **Code No.** | **Commodity** |
|---|---|
| SO 0088 | **Oilseed** (rape seeds, sunflowerseeds, cotton seeds and other oilseeds) |
| SO 0089 | **Oilseed except peanut** |

**Subgroup 023A Rape seeds**

| **Code No.** | **Commodity** |
|---|---|
| SO 2090 | **Rape seeds** |
| | (includes all commodities in this subgroup) |
| SO 0090 | **Mustard seeds** |
| | (Mustard seed; Mustard seed, Field; Mustards seed, Indian) |
| SO 3140 | **Borage seed** |
| | *Borago officinalis* L. |
| - | **Colza**, see Rape seed, SO 0495 |
| - | **Colza, Indian**, see Mustard seed, Field, SO 0694 |
| - | **Canola**, see Rape seed, SO 0495 |
| - | **Flax-seed**, see Linseed, SO 0693 |
| SO 3141 | **Gold of pleasure seed** |
| | *Camelina sativa* (L.) Crantz |
| SO 3142 | **Hare's ear mustard seed** |
| | *Congringia orientalis* (L.) Dumort |
| SO 3143 | **Lesquerella seed** (gaslight blodderpod) |
| | *Lesquerella recurvata* (Engelm. ex. A. Gray) S. Watson |
| SO 0693 | **Linseed** |
| | *Linum usitatissimum* L. |
| SO 3144 | **Meadow foam seed** |
| | *Limnanthes alba* Hartw. ex Benth. |
| SO 0485 | **Mustard seed** |

*Brassica nigra* (L.) Koch; *Sinapis alba* L.

Synonym: *Brassica hirta* Moench.

SO 0694 **Mustard seed, Field**

*Brassica campestris* L., var. *sarson* Prain; *B. campestris* L., var. *toria* Duthie & Fuller (??)

SO 0478 **Mustard seed, Indian**

*Brassica Juncea* (L.) Czern. & Coss.

SO 3145 **Perrila seed**

*Perrilla frutescens* (L.) Britton var. *frutescens*

SO 0698 **Poppy seed**

*Papaver somniferum L.*

SO 0495 **Rape seed**

*Brassica napus* L.

- **Rape seed, Indian**, see Mustard seed, Field

*Brassica campestris* L., var. *toria* Duthie & Fuller

SO 0700 **Sesame seed**

*Sesamum indicum* L.

Synonym: *S. orientale* L.

**Subgroup 023B Sunflower seeds**

| Code No. | Commodity |
|---|---|
| SO 2091 | **Sunflower seeds** (includes all commodities in this subgroup) |
| SO 3146 | **Jojoba seed** *Simmondsia chinensis* (Link) C. K. Schneid. |
| SO 0695 | **Niger seed** *Guizotia abyssinica* (L.) Cass. |
| SO 0699 | **Safflower seed** *Carthamus tinctorius* L. |
| SO 0702 | **Sunflower seed** *Helianthus annuus* L. |
| SO 3147 | **Tallowwood nut** *Ximenia americana* L. |
| SO 3148 | **Tea oil plant** *Camellia oleifera* C. Abel |

**Subgroup 023C Cotton seed**

SO 0691 **Cotton seed**

*Gossypium* spp.; several species and cultivars

**Subgroup 023D Other oilseeds**

| Code No. | Commodity |
|---|---|
| SO 3150 | **American oil palm seed** |
| | *Elaeis oleifera* (Kunth) Cortés |
| SO 3151 | **Babassu seed** |
| | *Attalea speciosa* Mart. Ex Spreng |
| SO 0690 | **Ben Moringa seed** |
| | *Moringa oleifera* Lam. |
| | Synonyms: *M. pterygosperma* Gaertn. |
| - | **Coconut**, see Group 022: Tree nuts |
| SO 3152 | **Coyoli palm seed** |
| | *Acrocomia aculeata* (Jacq.) Lodd. ex Mart. |
| - | **Drumstick tree seed**, see Ben Moringa seed, SO 0690 |
| SO 3153 | **Grape seed** |
| | *Vitis vinifera* L., several cultivars |
| - | **Groundnut**, see Peanut, SO 0697 |
| SO 3154 | **Hempseed** |
| | *Cannabis sativa* L. |
| - | **Horseradish tree seed**, see Ben Moringa seed, SO 0690 |
| SO 0692 | **Kapok** |
| | *Ceiba pentandra* (L.) Gaertn. |
| - | **Karite nuts**, see Shea nuts SO 0701 |
| - | **Maize**, see Group 020: Cereal grains |
| SO 3155 | **Melon seed** |
| | *Cucumis melo* L. spp. several species and cultivars |
| - | **Palm kernel**, see Palm nut, SO 0696 |
| SO 0696 | **Palm nut** |
| | *Elaeis guineensis* Jacq. |
| SO 0697 | **Peanut** |
| | *Arachis hypogaea* L. |
| SO 0703 | **Peanut, whole** |
| SO 3156 | **Pumpkin seed** |
| | *Cucurbita pepo* L.supsp. *pepo* |
| SO 0701 | **Shea nuts** |
| | *Butyrospermum paradoxum* (Gaertn.) Hepper, subsp. *parkii* (G. Don.) Hepper |

Synonym: *B. parkii* (G. Don.) Kotsky

- **Soya bean (dry),** see Group 015: Pulses
- **Soybean (dry),** see Soya bean (dry)

**Subgroup 23 E Oilfruits**

| Code No. | Commodity |
|---|---|
| SO 2093 | **Oilfruits** |
| | (includes all commodities in this subgroup) |
| SO 3158 | **American oil palm fruit** |
| | *Elaeis oleifera* (Kunth) Cortés |
| - | **Desert date**, see Group 005: Assorted topical and sub-tropical fruits - edible peel |
| SO 3159 | **Maripa palm fruit** |
| | *Attalea maripa* (Aubl.) Mart |
| - | **Olive**, see Group 005: Assorted tropical and sub-tropical fruits - edible peel |
| SO 3160 | **Palm fruit (African oil palm)** |
| | *Elaeis guineensis* Jacq. |
| - | **Peach palm**, see Group 005: Assorted topical and sub-tropical fruits - edible peel |
| | *Bactris gasipaes* Kunth var. *gasipaes* . |
| SO 3161 | **Tucum fruit** |
| | *Bactris setosa* Mart. |

**APPENDIX X**

# PROPOSED DRAFT REVISION OF THE GUIDELINES ON THE ESTIMATION OF UNCERTAINTY OF RESULTS FOR THE DETERMINATION OF PESTICIDE RESIDUES (CAC/RCP 59-2006) AT STEP 3

## BACKGROUND INFORMATION AND JUSTIFICATION

1. The determination of residues at trace levels (0.001 - 10 mg/kg) is subject to considerable analytical variability. To have a sound estimate of the quality of results the expression of measurement uncertainty (MU) is used. Due to the large scope of analytes and commodities in this field validation and consequently the estimation of MU can be extremely demanding. However, in order to minimise disputes resulting from questionable exceedance of regulatory limits, the estimation and reporting of MU is essential for demonstrating the boundaries and equivalence of analytical results generated in different laboratories. When results are obtained by analytical methods affected by bias, this difference should be considered in comparative evaluations (e.g., through an adequate estimation of the MU). Moreover, MU estimation is an essential prerequisite for accreditation and a requirement for laboratories.

2. Organizations often have limited financial, personnel and time resources which are necessary for a thorough MU calculation as described in numerous guidance papers on MU. Therefore, and in the interest of rationalizing laboratory work, it is considered impractical to calculate individual values for countless commodity/pesticide combinations [1], particularly when using the rigorous bottom-up approach. It was proposed in ALINORM 07/30/24, paras. 156-160 to develop a simplified guidance document for the estimation of MU, e.g., based on method validation, quality control and proficiency testing (PT) results.

3. At the 39th CCPR Meeting a discussion paper was prepared, forming the basis for a guidance document to be discussed at the 40th CCPR Meeting. The Committee decided to undertake new work and a revised draft paper was prepared by IAEA taking into account contributions from national Governments and international organizations as responses to CX/PR 09/41/5 towards the revision of CAC/GL 59-2006 at the 41st CCPR Meeting.

4. A revision of the MU guidance document using this discussion paper and the proposal for an extension of CAC/GL 59-2006 takes into consideration inputs by the EWG. The objective would be a guideline containing a practical supplement based on empirical data.

5. The revised document intends to support the practical adoption of the MU concept in food laboratories dealing with pesticide residue analysis. MU estimation should consider the complexity of pesticide residue analysis, i.e., several working steps eventually involving instrument calibration, chemical changes of the target analytes; limited laboratory resources; large number of combinations of commodities and pesticides. The key considerations are:

(a) elaboration of a practically oriented and straightforward guidance based on empirical top-down concepts;
(b) allowing for simplified MU estimation for the ease of compliance with ISO Standard 17025.

Uncertainty related to sampling is not subject of this guideline.

6. The need to control analytical procedures – and consequently the necessity for quantitative expression of MU – is widely recognized. The technical part of ISO Standard 17025 requires the estimation of MU as an essential parameter which laboratories must have in place[2].

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[1] More than 1,000 pesticides are known worldwide; more than 220 pesticides have a Codex Reference Number

[2] See ISO/IEC Standard 17025, Para. 5.10.3.1: In addition … test reports shall … include the following: "c) where applicable, a statement on the **estimated uncertainty** of measurement; information on uncertainty is needed in test reports when it is relevant to the validity of application of the test results, when a client's instruction so requires, or when the uncertainty affects compliance to a specification limit."

7. A number of guidance documents describe different approaches towards estimating MU. With regard to pesticide residue analysis, bottom-up calculations in particular are perceived as overly complicated and extremely laborious. This may in part be due to the fact that the MU concept had originally been developed for physical measurements where influencing factors and analytical parameters are limited and rather straightforward to define and to calculate. The concept is not easily transferable to complicated and multi-factorial chemical residue analysis procedures.

8. Pesticide residue methods involve several independent processes: (a) sample preparation, processing and storage, (b) extraction of analyte(s), (c) clean-up, (d) derivatization, (e) quantitation of analyte(s). Each sub-procedure can involve several steps including sample comminution, weighing, pipetting, calibration, and so on. Each procedural and/or working step will influence MU values, eventually different from analyte to analyte, from commodity to commodity, and mostly it is concentration dependent. Therefore, specific guidance applicable to pesticide residue analysis of food would be useful towards simplification and wider acceptance of the uncertainty concept, particularly in terms of top-down approaches on MU.

MU CONCEPTS FOR PESTICIDE RESIDUE ANALYSIS

9. Difficulties related to MU were discussed by CCMAS in 2007 (see ALINORM 07/30/23, paras 6-10). Although pesticide residue analysis in its complexity was not of particular concern, the matter is perceived similarly in CX/MAS 07/28/2-Add.2. The guidance document on MU summarizes the situation and draws together various developments in that area. In parts A to L the main relevant approaches as outlined in different publications are summarized and discussed. However, there is no specific guidance for particular analytical procedures as to which approach would be applicable for which purpose.

10. ISO/TS 21748:2004[3] provides additional mathematical concepts especially for estimating zones of acceptance and rejection around analytical values; straightforward top-down approaches are also discussed. One important statement relevant in this context is that the reproducibility standard deviation obtained from collaborative studies is considered as a valid basis for MU evaluation. If accuracy (or trueness) data can be utilized, e.g., with respect to an established reference value based on (certified) reference material, then uncertainty associated with the estimated bias should be included in the MU budget. Evaluating uncertainty according to ISO/TS 21748 comprises the following elements:

(a) repeatability, reproducibility and bias estimates from collaborative study;
(b) laboratory bias and precision within that expected on the basis of collaborative studies;
(c) laboratory bias and precision under control and effects appropriately combined to form a combined uncertainty estimate.

Most of the interlaboratory trials performed in this field may not allow the estimation of the uncertainty through this approach since some participants may use different analytical methods and the reference value is the consensus mean.

11. In guideline EA-4/16[4] it is recognized that “laboratories cannot in general be expected to initiate scientific research to assess the uncertainties associated with their measurements and tests”. The guideline, among others, describes the use of validation and method performance data for uncertainty evaluation. Data accumulated during validation and verification of test methods, interlaboratory studies according to ISO 5725, accumulated quality control data, and proficiency testing schemes typically characterize test method performance.

[3] Technical Specification ISO/TS 21748:2004: Guidance for the use of repeatability, reproducibility and trueness estimates in measurement uncertainty estimation, First edition 2004-03-15
[4] EA-4/16 EA guidelines on the expression of uncertainty in quantitative testing, December 2003 rev00

12. SANCO ACQ Guidelines[5] support this line of action towards evaluating MU associated with proficiency test results. Eurolab Technical Report[6] and NORDTEST Report[7] TR 537 outline in greater detail, among others, the use of method validation and PT data for estimating MU.

## ALTERNATIVE MU APPROACHES

13. A comprehensive and easily applicable MU concept is not provided by existing guidelines in terms of the practical application to pesticide residue analysis in foodstuffs. Calculating uncertainty budgets for thousands of relevant pesticide/crop combinations and dozens of analytical methods used in pesticide residue analysis is not practical in routine laboratory operation.

14. Empirical approaches proposed show alternatives also for pesticide residue analysis of foodstuffs. Practical and straightforward guidance for application in the determination of pesticide residues in foodstuffs could be made available through top-down MU concepts. Validation data, repeatability, reproducibility, outcomes of PT schemes can be utilized for simplified MU estimation applicable in food control laboratories.

15. Based on a series of PT schemes, the ACQ Guidelines of the EC indicate that actual and target values according to different performance and quality criteria were well within the same order of magnitude. For instance, values derived from Fitness-for-Purpose (FFP), the Horwitz equation and standard deviation calculated from EC PT schemes, after rejection of outliers (Qn), expressed in (%), were very similar. Accordingly, the evaluation of the recent EC PT schemes demonstrates that a FFP variability of 25% can be accepted as a sound representation of performance under these circumstances. As a consequence, accepting 25% variability as a standard deviation would lead to a generalized assumption of ±50% MU. The laboratories must prove that this uncertainty value is adequate to describe the performance of their analytical method, for instance through satisfactory participations in proficiency tests (see para 21.). The extrapolation of good performance for the analysis of one analyte/matrix combination to a broader scope of analysis should be based on the knowledge of the equivalence of the performance of the method within the considered scope of analysis.

## MU ESTIMATION BASED ON HORWITZ FORMULAS

16. Similarly to the PT based approach MU may be estimated using empirical Horwitz formula. These generalized expressions are based on countless empirical interlaboratory comparison data. This approach takes into account that expected MU values are dependent on the residue level, i.e., the higher the residue concentration, the lower the anticipated relative MU. The Horwitz approach is expressed by the following equation (equivalent approximations exist):

$$RSD_R = 2^{1-0.5\log c} = 2 * c^{-0.1505}$$

with:

$RSD_R$ = expected relative interlaboratory standard deviation (%)

c = concentration of the analyte (expressed as kg/kg,
i.e., 0.01 mg/kg = 0.00000001 kg/kg)

Accordingly putting real figures into the above formulas concentration dependent $RSD_R$ values are obtained, i.e.:

0.01 mg/kg ⇒ 32.0 %

0.1 mg/kg ⇒ 22.6 %

1 mg/kg ⇒ 16.0 %

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[5] Document N° SANCO/2007/3131 - METHOD VALIDATION AND QUALITY CONTROL FOR PESTICIDE RESIDUE ANALYSIS IN FOOD AND FEED (www.crl-pesticides.eu)

[6] Eurolab Technical Report No. 1/2007, March 2007, Measurement uncertainty revisited: Alternative approaches to uncertainty evaluation (www.eurolab.org)

[7] NORDTEST Report TR 537, HANDBOOK FOR CALCULATION OF MEASUREMENT UNCERTAINTY IN ENVIRONMENTAL LABORATORIES, EDITION 2

17. $RSD_R$ values depending on the respective concentration levels can be transformed into MU by multiplying with an appropriate coverage factor, normally k = 2. Advantages of this concept[8] include the incorporation of laboratory bias because laboratory variability is also randomized. Deviations generated by different laboratories have been included. The Horwitz equation was found to be widely applicable to all concentration, methods and analytes.

18. Drawbacks associated with the approach are that appropriate and sufficient data are needed as the basis for the estimation of a valid relation between concentration and uncertainty since the Horwitz data came from a highly diverse range of collaborative trials with concentrations ranging from 0.05 µg/kg to 60%, involving a large number of other compounds than pesticides. Prescribed methods were used, and PT data were not included. It should be also noted, that ever since the establishment of the Horwitz equation, instrumentation technology has experienced significant advancements both in terms of sensitivity and selectivity, which reduces the uncertainty contribution by the instrumental measurement process. The resulting estimates of uncertainty accordingly are based on the distribution of between-laboratory standard deviations.

MU VALUES IN PESTICIDE RESIDUE ANALYSIS BASED ON EMPIRICAL DATA

19. Data derived from method validation can be utilized for verifying recovery values and associated standard deviations characterizing the use of analytical methods. A step by step practical guidance should incorporate representative examples of commonly used analytical methods. In practical terms a guidance document would incorporate empirical data and outcomes of PT schemes. In particular the following information and data can be utilized:

(a) Initially, laboratories should estimate MU from precision and method bias data derived from validation studies and/or verification experiments and adjusted by the use of long term quality control data, Practical Application, clause (1), such as recovery, repeatability and intermediate precision.

(b) Results from the participation in PT schemes.

20. Applying a PT-based simplified ±50% MU approach should only be used by individual laboratories if the following analytical performance and quality criteria can be demonstrated:

(a) Within-laboratory SD smaller than the between-laboratories SD.

(b) Successful participation in PT schemes (z-score $\leq|2|$ for 95%, z-score $\leq|3|$ for not more than 5% of the values).

(c) Small bias from method and/or laboratory recovery tests.

(d) Verification of analytical performance by regularly analysing suitable reference material, if available.

21. As is an emerging practice in the EC and elsewhere already, empirical top-down estimation of ±50% MU could complement a mathematically stringent bottom-up calculation model if the respective empirical quality criteria are met. Alternatively the Horwitz formula approach of estimating concentration-dependent MU based on the evaluation of results of interlaboratory collaborative tests could be applied as well. However, the laboratory must prove the applicability of this uncertainty value to their measurements.

Note: Laboratories uncomfortable with these empirical approaches or where such is not deemed applicable may wish to apply step-by-step bottom-up calculation to specifically generate distinct individual uncertainty estimates as given elsewhere[9] including guidance on the treatment of concentration levels eventually conflicting with trigger values[10].

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[8] L. Alder et al.: Estimation of Measurement Uncertainty in Pesticide Residue Analysis. JAOAC International. Vol. 84, No 5, 2001, 1569-1577.

[9] primarily: EURACHEM/CITAC Guide CG 4, Quantifying Uncertainty in Analytical Measurement, Second Edition, QUAM 2000.1

[10] EURACHEM/CITAC Guide, Use of uncertainty information in compliance assessment, First Edition 2007

PRACTICAL AND SIMPLIFIED MU ESTIMATION BASED ON TOP-DOWN APPROACHES

**Underlying principles, formulas and statistics for PT based estimation of MU**

Within-laboratory reproducibility standard deviation is combined with estimates of the method and laboratory bias using PT data:

$$U' = k * u' \quad \text{and} \quad u' = \sqrt{u'(R_W)^2 + u'(bias)^2}$$

where:

$$u'(bias) = \sqrt{RMS'_{bias}{}^2 + u'(C_{ref})^2}$$

and:

$$RMS'_{bias} = \sqrt{\frac{\sum (bias'_i)^2}{m}}$$

and:

$$u'(C_{ref}) = \frac{\sum_i \frac{S'_{Ri}}{\sqrt{n_i}}}{m}$$

with:

| | | |
|---|---|---|
| U' | = | expanded relative uncertainty |
| k | = | coverage factor |
| u' | = | combined relative standard uncertainty |
| u'($R_W$) | = | intermediate precision relative standard uncertainty |
| u'(bias) | = | relative standard uncertainty component from method and laboratory bias, based on PT data |
| RMS'$_{bias}$ | = | root mean square of relative bias values |
| bias'$_i$ | = | relative bias of PT i [obtained result$_i$ – assigned value$_i$)/assigned value$_i$] |
| u'($C_{ref}$) | = | average relative standard uncertainty of assigned values |
| S'$_{Ri}$ | = | interlaboratory relative standard deviation of PT i |
| $n_i$ | = | number of participants in PT i |
| m | | total number of PT schemes |

**Requirements**

Method Validation and Quality Control Procedures for Pesticide Residues Analysis in Food and Feed, SANCO document (ref 5) para. 64: Acceptability of analytical performance for routine analysis.

- Individual recovery result should normally be in the range of the mean recovery ±2 x %RSD.
- Addition of a spiked sample to each batch of analysis.
- Results may be used for quality control charts.

**Long-term quality control**

Suitable samples for long-term quality control are:

- Certified reference materials.
- Remaining materials from proficiency tests.
- Other materials with suitable (and stable) concentrations of pesticides.
- Spiked samples.
- Matrices and analytes have to be stable.

**Practical application**

(1) Prerequisites for using an expanded relative uncertainty of 50 %:

– The laboratory has demonstrated its technical capability to generate reliable results at the required level of quality, i.e. by:
  - validation data for the respective analytical method;
  - acceptable quality control data, e.g., control charts for respective methods and compounds;
  - successful participation in PT schemes which fulfil PT quality criteria conducted according to the Harmonized Protocol[11], ISO Guide 43-1 etc.;
  - Evidence of the equivalence of the performance of the analytical method for selected analytes and commodities representing the entire scope of analysis.

(2) Uncertainty evaluation using laboratory evaluation data:

– identification of the main sources of uncertainty (weighing, calibration, purity, temperature, volumetric glassware, etc.);

– evaluation of the order of magnitude of the uncertainty of basic laboratory operations in relation to the overall uncertainty of the procedure;

– expected result:
  - uncertainty of basic laboratory operations almost negligible;
  - random run-to-run variability as the principal source of MU.

– estimation of overall bias and recoveries from in-house validation and quality control data (fortification, spiking, reference materials, etc.):
  - the mean of the resulting relative standard deviation taken as relative uncertainty is associated with random variation;
  - analyte mean recovery within 70-120 %.

(3) Comparison with PT results:

– series of PT rounds with slightly varying concentrations and matrices;

– the relative standard deviation of valid data is comparable to the expected relative standard deviation (comparing PT results with real laboratory data).

(4) Verification of uncertainty estimates:

– checks using observed within-laboratory precision;

– checks using certified reference materials or suitable test materials;

– checks using reference methods;

– checks based on the results of PT (including external QA data or measurement audits);

– checks based on comparison of results with other laboratories,

– comparison with other uncertainty estimates based on different approaches or different data (some approaches are expected to produce significantly different MU estimations).

(5) Conclusion:

– PT data can provide strong support for the laboratory estimate of MU based on validation data;

– PT data can form the basis for estimating MU, using the dispersion of relative differences.

[11] M Thompson, S L R Ellison, R Wood; The International Harmonized Protocol for the proficiency testing of analytical chemistry laboratories (IUPAC Technical Report); Pure Appl. Chem. 78(1) 145-196 (2006)

**Evaluation of uncertainty estimates against PT results**

Checking the quality of uncertainty estimates may apply the zeta (ζ) score formula laid out in the Eurolab Report[6]:

$$\zeta = \frac{x - x_a}{\sqrt{u(x)^2 + u(x_a)^2}}$$

with:

| | | |
|---|---|---|
| x | = | laboratory result |
| $x_a$ | = | assigned value |
| u(x) | = | standard uncertainty of laboratory results |
| $u(x_a)$ | = | standard uncertainty of assigned values |

Uncertainties are considered correct if |ζ| is in the range 0 to 2; underestimated if |ζ| is frequently over 2.

**Limitations**

In general, proficiency tests are not carried out frequently enough to provide good estimates of the performance of an individual laboratory's implementation of a test method. However, in the special case where:

- the types of test items used in the scheme are appropriate to the types tested routinely,
- the assigned values in each round are traceable to appropriate reference values, and,
- the uncertainty associated with the assigned value is small compared with the observed spread of results,

the dispersion of the differences between the reported values and the assigned values obtained in repeated rounds provides a basis for an evaluation of the uncertainty (see Eurolab and NORDTEST references).
A PT-based top-down approach is therefore applicable where PT data support this. Referring to EC-PT schemes this approach could be different for various matrices and pesticide/ matrix combinations.
Certain matrix/pesticide combinations would need separate MU evaluation following the guidelines and approaches given elsewhere.

**Summary**

With the assumptions and prerequisites outlined for conducting and evaluating PT schemes and classification of laboratory performance, based on top-down approaches, an estimate MU of ±50% as a generalized value would provide an acceptable and practical approximation of pesticide residue analysis of foodstuffs to daily laboratory reality.

**Appendix:** Practical application of the top-down approach on MU estimation by utilizing PT and internal validation and quality assurance data.

Application example:

$$S_R = \sqrt{S_{ip}^2 + S_{bl}^2}$$

When each laboratory report the mean of n replicated measurements obtained within the laboratory in intermediate precision conditions (e.g. different days), the reproducibility of the method is reduced from $s_R$ to $s_{R;n}$:

$$S_{R;n} = \sqrt{\frac{S_{ip}^2}{n} + S_{bl}^2}$$

Considering the reproducibility, $S_{R;2}$, of an analytical method estimated in a interlaboratory trial where each participant reports the mean of two replicates obtained within a laboratory in intermediate precision conditions, equal to 0.2325 mg/kg (mean concentration of 0.93 mg/kg and RSD of 25 %):

$$S_{R;2} = 0.2325 = \sqrt{\frac{S_{ip}^2}{2} + S_{bl}^2}$$

If the relative intermediate precision standard deviation is 17 % (i.e. 0.1581 mg/kg), then:

$$S_{R;2} = 0.2325 = \sqrt{\frac{0.1581^2}{2} + S_{bl}^2}$$

Therefore:

$$S_{bl} = \sqrt{0.2325^2 - \frac{0.1581^2}{2}} = 0.2038\ mg/kg$$

Therefore, the reproducibility, $s_R$, associated with single measurements is:

$$S_R = \sqrt{S_{ip}^2 + S_{bl}^2} = \sqrt{0.1581^2 + 0.2038^2} = 0.2579\ mg/kg$$

Therefore, it should be reported an expanded relative uncertainty associated with single measurements of 55 %.

Note: There is a relation between the following precision values:
$s_{ip}$ – intermediate precision standard deviation;
$s_{bl}$ – between laboratory precision standard deviation;
$s_R$ – reproducibility standard deviation.

**APPENDIX XI**

## PRIORITY LIST OF CHEMICALS SCHEDULED FOR EVALUATION AND RE-EVALUATION BY JMPR

The following are the tentative schedules to be evaluated by the FAO/WHO Joint Meeting on Pesticides Residues from 2010 to 2016.

**2010 JMPR**

| **Toxicological evaluations** | **Residue Evaluations** |
|---|---|
| | |
| **New Compounds** | **New Compounds** |
| clothianidin | clothianidin – corn, barley, wheat, rye, oilseed rape, lupin, sugar beet, sunflower, rice, cotton, sorghum, potato, poppy, mustard, carrot, cucumber, onion, lettuce, tomato, pepper, squash, cabbage, pome fruit, stone fruit, banana, grape, broccoli, eggplant, soybean, milk, egg, poultry meat |
| cyproconazole | cyproconazole – almond, apple, barely, bean, coffee, maize, oat, pea, peanut, rice, sugar beet, soybean, triticale and wheat.] |
| dicamba | dicamba –wheat, barley, corn, cottonseed, soybean, sugarcane molasses, asparagus, blueberry |
| etoxazole | etoxazole – grape, melons, cucumber, stone fruit, plum, hops, mint, tomato, coffee |
| flubendiamide | flubendiamide – apples, pears, apricot, nectarine, peach, cherries, plum, prune, grape (table), raisin, wine (if MRL not included under table grape), almonds, pecans, walnuts, muskmelon, watermelon, cucumbers, summer squash, celery, head lettuce, leaf lettuce, spinach, broccoli, cauliflower, cabbage, mustard greens, tomatoes, peppers, sweet corn, corn, soybean, cotton seed, rice, tea, and corresponding animal commodity MRLs. |
| fluopyram | fluopyram – root and tuber vegetables, bulb vegetables, leafy vegetables, brassica (cole) leafy vegetables, Legume vegetables, Fruiting vegetables, Cucurbit vegetables, Citrus fruits, Pome fruits, Stone fruits, Small berries, Grapes, Strawberry, Tree nuts, Cereal grains (except rice), Grasses (forage, fodder, hay), Herbs and spices, Artichoke, Canola/rape, Hops, Peanuts, Sunflower |
| meptyldinocap | meptyldinocap – pome fruits, stone fruits, grapes, strawberries, cucurbits with edible and inedible peel |
| thiamethoxam | thiamethoxam – plant origin: aubergine, artichokes, asparagus, avocados, barley, banana, beans, beetroot, berries (blackberry, bush-berry, cranberries, currants, strawberries, others), brassicas (cabbage, broccoli, brussel sprouts, buckwheat, Chinese cabbage, others), carrots, citrus group (grapefruits, lemons, mandarins, oranges, others), cereals (barley, rye, wheat, others) celery, chicory, cocoa, coffee, cotton, cucurbits (cucumber, melon, watermelon, zucchini), fennel, garlic, gingko, ginseng, grapes, guava, hops, kaki, kiwifruit, lettuce, linseed, maize, mango, mushrooms, nuts (almonds, cashew, chestnuts, coconuts, hazelnuts, pistachio, others), onions, papaya, parsley, passion fruit, peanuts, peas, peppermint, peppers, pineapples, pome fruits (apples, pears, others), pomegranates, potatoes, radish, rice, root and tuber vegetables, safflower, salsify, sesame seeds, spinach, soybean, stone fruits (apricots, cherries, nectarines, peach, plums, others), sugar beets, sugarcane, sunflower, tea, tomatoes, watercress. Animal origin: cattle, (fat, kidney, liver, meat), goat, horse (meat), milk, pork (fat, kidney, liver, meat), poultry (meat, eggs), sheep (meat).] |

| | |
|---|---|
| **Periodic re-evaluations** | **Periodic re-evaluations** |
| dithianon (028) | |
| | azinphos-methyl (002) – [awaiting advice on commodities] |
| tebuconazole (189) | bifenthrin (178) – wheat, barley, corn, potato, hops, rye, sweet potato, brassica group, citrus group, lettuce, fruiting vegetables, cucurbit group, pear, berry group, grape, banana, cottonseed, rapeseed and tea. |
| | cadusafos (174) – banana and potato |
| | chlorotalonil (081) – barley, rice, triticale, wheat, lupin, soybean, lentil, sugar-beet, artichoke, asparagus, aubergine, bean, broccoli, brussel sprouts, cabbage, carrot, cauliflower, celery, cucumber, pumpkin, garlic, leek, lettuce, melon, onion, pea, peanut, peppers, shallot, spinach, tomato, watermelon, zucchini, sweet corn, potato,banana, blackberry, blueberry, citrus, cranberry, gooseberry, grape, mango, papaya, peach, plum, pome-fruit, apricot, cherry, nectarine, strawberry, cacao, coffee, hop, almond, pistachio, oil seed rape, animal commodities, ginseng, horseradish, okra, persimmon, rhubarb, yam |
| | |
| **Evaluations** | **Evaluations** |
| | bifenazate (219) – egg plant, tea, citrus fruits, melons, tropical fruits, caneberry, legume vegetables, soybean, peas and beans. |
| | boscalid (221) – hops (dried cones) |
| | chlorantraniliprole (230) – brassica vegetables (broccoli, cabbage (chinese, chinese mustard, green, head, napa, oxhead, pointed, red, savoy, white, yellow), mustard greens, cauliflower, broccoli (chinese), brussel sprouts, cavalo, broccoli, kailan and kohlrabi), tree nuts (almonds, beech nuts, brazil nuts, butternuts, cashews, chestnuts, chinquapins, filberts (hazelnuts), hickory nuts, japanese horse-chestnut, java almonds, macadamia nuts, pachira nuts, paradise nuts, pecans, pine nuts, pili nuts, pistachio nuts, sapucaia nuts, tropical almonds, and walnuts), edible-podded beans (bean (phaseolus spp.; includes runner bean, snap bean, wax bean); bean (vigna ssp., includes asparagus bean, chinese longbean, moth bean, yardlong bean); jackbean; soybean (immature seed); sword bean), caneberries (cane fruits - blackberry; loganberry; red and black raspberry; cultivars and/or hybrids of these), strawberries, root and tuber vegetables (arracacha; arrowroot; artichoke, chinese; artichoke, jerusalem; beet, garden; beet, sugar; burdock, edible; canna, edible; carrot; cassava, bitter and sweet; celeriac; chayote (root); chervil, turnip-rooted; chicory; chufa; dasheen (taro); ginger; ginseng; horseradish; leren; parsley, turnip-rooted; parsnip; potato; radish; radish, oriental (daikon); rutabaga; salsify (oyster plant); salsify, black; salsify, spanish; skirret; sweet potato; tanier (cocoyam); turmeric; turnip; yam bean (jicama, manioc pea); yam, true), sweet corn, maize/field corn, rice, mint, alfalfa seed, commodities of animal origin |
| | difenoconazole (224) – review of alternative GAP (banana – higher MRL (china); additional MRLs (green beans, passion fruit), (USA – tree nuts) |
| | endosulfan (32) – tea green / black (China) |

| | |
|---|---|
| | fenpyroximate (193) – re-evaluate data for grapes following JMPR recommended new ARfD, additional MRLs for fruiting vegetables, okra, melons, cucumber, citrus fruits, pome fruit, tree nuts, pistachio, hops, mint (USA) |
| | fludioxonil (211) – sweet potato, pomegranate (post harvest) |
| | novaluron (217) – turnips green, potato (increase MRL), sweet potato, broccoli, cauliflower, collard greens, mustard greens, tomato (increase MRL), cherry ,p each, plum, blueberry, sugar cane. |
| | triazophos (143) – residue evaluation in edible portion (soybean – immature seeds, Thailand); cereals incl. rice (China) |

**2011 JMPR**

| **Toxicological Evaluations** | **Residue Evaluations** |
|---|---|
| | |
| **New Compounds** | **New Compounds** |
| clopyralid | clopyralid – hops, pome fruits, stone fruits, cranberry, strawberry, spinach, sugar beets, barley, corn, oats, sorghum, wheat, linseed, rape seed, grass forage |
| emamectin-benzoate | emamectin-benzoate – grapes, potatoes, pome & stone fruits, tomatoes, eggplants, cucurbits (cucumber, melon, watermelon), lettuce, spinach, pepper, beans & peas, brassicas |
| ethaboxam | ethaboxam– grape |
| MCPA | MCPA -Wheat grain, barley grain, peas |
| | |
| **Periodic re-evaluations** | **Periodic re-evaluations** |
| dicofol (026) – no longer supported by the manufacturer | dicofol (026) – not supported by the manufacturer – tea and data package to be provided by India |
| diquat (031) | diquat (031) – cereals (including barley, wheat, maize, oats, rice, sorghum), oilseeds (including linseed, oilseed rape, soya bean, sunflower, cotton, poppy), legume vegetable group (including peas, beans, lentils), head brassica group (including cabbage), flowering brassica group, leafy brassica group, fruiting vegetable group (including tomato, pepper), root and tuber group (including carrot, radish, beetroot, sugarbeet, potato), stem vegetable group (including asparagus, celery, leek), cucurbits (edible and inedible peel), Bulb vegetables (including onion), citrus fruit, lettuce group, spinach, canary, lupine, mustard, apple, banana, chicory witloof, coffee, sweet corn, grape, herbs (including parsley and sage), hop, kohlrabi, lucerne, olive, peach, strawberry, clover, grass, alfalfa, sugarcane |
| dichlorvos (025) | |
| | dithianon (028) – pome fruit, cherry, grapes, hops, mandarin |
| etofenprox (184) | etofenprox (184) – [awaiting advice on commodities] |
| fenpropathrin (185) | |
| | cycloxydim (179) – beans (green and dried), brassicae, carrot, grape, leek, lettuce (head and leafy), peas (fresh and dried), potato, rapeseed, strawberry, sugarbeet |
| fenbutatin oxide (109) | tebuconazole (189) – artichoke, banana, barley, brassica vegetables, |

| | |
|---|---|
| | broad bean, citrus, carrot, coffee beans, cucumber, elderberries, garlic, grapes, hops, leek, lettuce head, maize, mango, melons, oats, onion, papaya, peach, peanut, peppers sweet, plums, pome fruit, prunes, rape seed, rice, rye, soya bean, summer squash, sweet corn, tomato, watermelon, wheat |
| | |
| **Evaluations** | **Evaluations** |
| | cyfluthrin (157) – soybean |
| | cypermethrin (118) – citrus fruit, asparagus (Thailand) and tea (India, China) |
| | acephate (95) – rice (China) |
| | profenofos (171) – chilli pepper, chilli pepper (dry), (Thailand) – note retain 4 year rule |
| | spinosad (203) – cranberry, hops (USA) |
| | |

**2012 JMPR**

| **Toxicological evaluations** | **Residue Evaluations** |
|---|---|
| | |
| **New Compounds** | **New Compounds** |
| | |
| **Periodic re-evaluations** | **Periodic re-evaluations** |
| amitraz (122) | amitraz (122) – [awaiting advice on commodities] |
| bentazone (172) | bentazone (172) – beans (green and dried), peas (green and dried), cereals, maize, sorghum, onion, peanuts, potato, linseed, meat, milk, eggs. |
| disulfoton (74) | disulfoton (74) –support from USA [awaiting advice on commodities] |
| fenvalerate (119) | fenvalerate (119) – support from USA [awaiting advice on commodities] |
| glufosinate-ammonium (175) | glufosinate-ammonium(175) –manufacturer will provide commodities in 2009 |
| tecnazene (115) | tecnazene (115) – support unknown |
| aldicarb (117) | |
| | dichlorvos (025) |
| | fenpropathrin (185) – [awaiting advice on commodities] |
| | fenbutatin oxide (109) –tree nuts, pome fruit, banana, cherry, citrus fruit, cucumber, grapes, raisins, stone fruit, strawberry, tomato, meat, milk, eggs |
| | oxamyl (126) – residue definitions, methods |
| | |
| **Evaluations** | **Evaluations** |
| | |

**2013 JMPR**

| **Toxicological evaluations** | **Residue Evaluations** |
|---|---|
| | |
| **New Compounds** | **New Compounds** |

| | |
|---|---|
| **Periodic re-evaluations** | **Periodic re-evaluations** |
| bromide ion (47) –support unknown | bromide ion (47) – support unknown |
| dichlofluanid (82) – no longer supported by the manufacturer | dichlofluanid (82) – not supported by the manufacturer |
| dinocap (87) – no longer supported by the manufacturer | dinocap (87) – not supported by the manufacturer |
| metalaxyl (138) – support from USA | metalaxyl (138) – support from USA – supervised trials (Thailand) |
| methidathion (51) – support unknown | methidathion (51) – support unknown |
| triforine (116) | triforine (116) – [awaiting advice on commodities] |
| | aldicarb (117) – [awaiting advice on commodities] |
| | |

**2014 JMPR**

| **Toxicological evaluations** | **Residue Evaluations** |
|---|---|
| | |
| **New Compounds** | **New Compounds** |
| | |
| **Periodic re-evaluations** | **Periodic re-evaluations** |
| bromopropylate (70) – support unknown | bromopropylate (70) – support unknown |
| diazinon (22) –support unknown | diazinon (22) – support unknown |
| hydrogen phosphide (46) – support unknown | hydrogen phosphide (46) – support unknown |
| myclobutanil (181) | myclobutanil (181) – pome fruits, stone fruits, black currant, grapes, strawberry, banana, hops, tomato |
| penconazole (182) | penconazole (182) – brassica vegetables (broccoli, brussels sprouts, cauliflower, chinese cabbage), pome fruit, fruiting vegetables (tomato, pepper, aubergine), root and tuber vegetables (carrot, parsnip, turnip), cucurbit vegetables (cucumber, melon, watermelon, pumpkin, zuchini), berries (blackberry, blueberry, blackcurrant, gooseberry, raspberry, cranberry), stone fruit (apricot, cherry, peach, plum), legume vegetables (peas, beans), nuts (almond, pecan, cashew, jujube, pistachio, hazelnut, pine nut, macadamia, chestnut), soya, strawberry, loganberry, sugarbeet, tobacco, potato, clementine, grapefruit, nectarine, cumquat, mango, gherkin, loquat, asparagus, leek, banana, lambs lettuce, rocket, chicory, canola, parsley, mint, papaya, alfalfa, barley, rice, wheat, sweet corn, hops, lentil, persimmon, avocado, artichoke, grapes, onion, fennel |
| phosalone (60) – support unknown | phosalone (60) – support unknown |
| | |
| **Evaluations** | **Evaluations** |
| | |

**2015 JMPR**

| **Toxicological evaluations** | **Residue Evaluations** |
|---|---|
| | |
| **New Compounds** | **New Compounds** |
| | |
| **Periodic re-evaluations** | **Periodic re-evaluations** |

| | |
|---|---|
| abamectin (177) | abamectin (177) – pome fruits, cucurbits (edible and inedible peel), grapes, citrus fruits, stone fruits, strawberries, hops, leafy vegetables (lettuce, spinach, endive, celery), potato, almond, walnut, bean, coffee, cotton, fruiting vegetables (tomato, aubergine, pepper, sweet pepper), avocado, papaya, mango, avocado, onion |
| chlormequat (15) | chlormequat (15) – cereals, cottonseed, maize, rapeseed, maize fodder, cereals fodder/straw, meat, milk, eggs |
| clethodim (187) | clethodim (187) – bean, broccoli, cabbage, carrot, cranberry, cucurbits, hops, lettuce, pea, strawberry (USA) |
| ethephon (106) | ethephon (106) – [awaiting advice on commodities] |
| fenpropimorph (188) | fenpropimorph (188) – banana, cereals, sugar beet, cereals fodder/straw, meat, milk, eggs |
| Teflubenzuron (190) | Teflubenzuron (190) |
| | |
| **Evaluations** | **Evaluations** |
| | |

**2016 JMPR**

| **Toxicological evaluations** | **Residue Evaluations** |
|---|---|
| **New Compounds** | **New Compounds** |
| | |
| **Periodic re-evaluations** | **Periodic re-evaluations** |
| bioresmethrin(93)– not supported by manufacturer | bioresmethrin (93) – not supported by the manufacturer |
| iprodione (111) | iprodione (111) – tree nuts, cereals, beans, (dried), blackberry, broccoli, carrots, cheery, cucumber, grapes, kiwi, lettuce (head and leafy), onion, stone fruit, pome fruit, rapeseed, raspberry, sugar beet, sunflower, tomato, witloof. |
| Permethrin (120) – no manufacturer responsible | permethrin (120) - no manufacturer responsible |
| tolclofos-methyl (191) | tolclofos-methyl (191) – [awaiting advice on commodities] |
| | |
| **Evaluations** | **Evaluations** |
| | |