

CODEX ALIMENTARIUS COMMISSION



**Food and Agriculture
Organization of
the United Nations**



**World Health
Organization**

E

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REP11/PR

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

34th Session

Geneva, Switzerland, 4 – 9 July 2011

REPORT OF THE 43rd SESSION OF THE

CODEX COMMITTEE ON PESTICIDE RESIDUES

Beijing, China, 4 - 9 April 2011

Note: This report includes Codex Circular Letter CL 2011/09-PR

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CX 4/40.2

CL 2011/09-PR
April 2011

To: - Codex Contact Points
- Interested International Organizations

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SUBJECT: DISTRIBUTION OF THE REPORT OF THE 43RD SESSION OF THE CODEX COMMITTEE ON PESTICIDE RESIDUES (REP11/PR)

The report of the 43rd Session of the Codex Committee on Pesticide Residues will be considered by the 34th Session of the Codex Alimentarius Commission (Geneva, Switzerland, 4 – 9 July 2011).

PART A: MATTERS FOR ADOPTION BY THE 34TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION:

1. **Draft Maximum Residue Limits for Pesticides at Step 8** (paras. 31 - 81 and Appendix II);
2. **Proposed Draft Maximum Residue Limits for Pesticides at Step 5/8 (with omission of Steps 6/7)** (paras. 31 - 81 and Appendix III); and
3. **Proposed Draft Revision to the Guidelines on the Estimation of Uncertainty of Results for the Determination of Pesticide Residues (Annex to CAC/GL 59-2006) at Step 5/8 (with omission of Steps 6/7)** (para. 121 and Appendix X).

Governments and international organizations wishing to submit comments on the above draft and proposed draft MRLs, should do so in writing, in conformity with the Procedures for the Elaboration of Codex Standards and Related Texts (Part 3 – Uniform Procedure for the Elaboration of Codex Standards and Related Texts, Procedural Manual of the Codex Alimentarius Commission), **preferably by email**, to the above address **before 15 June 2011**.

4. **Proposed Draft Maximum Residue Limits for Pesticides at Step 5** (paras. 31 – 81 and Appendix IV); and
5. **Proposed Draft Revision of the Codex Classification of Foods and Animal Feeds at Step 5 - *Assorted Tropical and Sub-tropical Fruits - Edible Peel and Assorted Tropical and Sub-tropical Fruits - Inedible Peel*** (para. 100 and Appendix VIII).

Governments and international organizations wishing to submit comments on the above draft and proposed draft MRLs, should do so in writing, in conformity with the Procedures for the Elaboration of Codex Standards and Related Texts (Part 3 – Uniform Procedure for the Elaboration of Codex Standards and Related Texts, Procedural Manual of the Codex Alimentarius Commission), **preferably by email**, to the above address **before 15 June 2011**.

PART B: OTHER MATTERS FOR ACTION BY THE 34TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION

6. **Codex Maximum Residue Limits for Pesticides recommended for Revocation** (paras. 31 - 81 and Appendix V); and
7. **Analysis of Pesticides Residues: Recommended Methods (CODEX STAN 229-1993)** (para. 123).

Governments and international organizations wishing to submit comments on the proposed revocations on Codex MRLs and other related texts should do so in writing, **preferably by email**, to the above address **before 15 June 2011**.

PART C: REQUEST FOR COMMENTS AND INFORMATION ON:**8. Matters related to the 2011 JMPR including Concern Forms (paras. 31 - 81)**

Those countries and observers specified under individual compounds concerning matters related to the JMPR 2011 (e.g. GAP, residue evaluation, intake assessment, etc.) on specific pesticide/commodity(ies) to be considered by JMPR 2011, including submission of concern forms together with necessary data, 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 Philippe VERGER, WHO JMPR Secretary, Appia Avenue 20, 1211 Geneva 27, Switzerland, Fax: +41 22 791 4807, E-mail: vergerp@who.int; **3)** Dr Xiongwu QIAO, Shanxi Academy of Agricultural Sciences, 2 Changfeng Street, Taiyuan, Shanxi Province, 030006, P.R. China, Fax: +86 351 7126215, E-mail: ccpr_qiao@agri.gov.cn, ccpr@agri.gov.cn; and **4)** Secretariat, 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 2011.**

Those countries and observers specified under individual compounds in REP11/PR, 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 43rd Session of the Codex Committee on Pesticide Residues are as follows:

MATTERS FOR ADOPTION BY THE 34TH SESSION OF THE COMMISSION

The Committee agreed to forward:

Draft and proposed draft MRLs for pesticides and other related texts

- Draft and proposed draft MRLs for pesticide at Steps 8 and 5/8 with omission of Steps 6/7 (paras. 31 - 81 and Appendix II);
- Proposed draft revision to the Guidelines on the Estimation of Uncertainty of Results for the Determination of Pesticide Residues (Annex to CAC/GL 59-2006) at Step 5/8 with omission of Steps 6/7 (para. 121 and Appendix X);
- Proposed Draft MRLs for pesticides at Step 5 (paras. 31 - 81 and Appendix IV);
- Proposed Draft Revision of the Codex Classification of Foods and Animal Feeds: Assorted Tropical and Sub-tropical Fruits - Edible peel and Assorted Tropical and Sub-tropical Fruits - Inedible Peel at Step 5 (para. 100 and Appendix VIII);

Revocation of MRLs for pesticides and other related texts

- Revocation of Codex MRLs for pesticides (paras 31 - 81 and Appendix V); and
- Revocation of CODEX STAN 229-1993 - Analysis of Pesticide Residues: Recommended Methods (para. 123).

Approval of new work

- Priority List for the Establishment of MRLs for Pesticides (para. 140 and Appendix XI);

MATTERS OF INTEREST TO THE COMMISSION

The Committee:

- agreed that the revision of the Risk Analysis Principles applied by the Codex Committee on Pesticide Residues in relation to their consistency with the Working Principles for Risk Analysis and their applicability to animal feed should be considered in the framework of the ongoing revision of the Risk Analysis Principles (paras. 8 and 138);
- agreed that further discussion on the revision of the definition of "hazard" was no longer necessary (para. 9);
- noted a number of matters arising from the 2010 JMPR including replies to specific concerns raised by the last session of the Committee (paras. 11 - 30);
- agreed to retain several draft and proposed draft MRLs for pesticides at Steps 7 and 4 awaiting for the JMPR evaluation (paras. 31 - 81);
- agreed that the 2011 JMPR could elaborate MRLs proposals with and without making use of the concept of proportionality so that the result could be compared and discussed at the next session of the Committee (para. 86);
- agreed to hold the three commodity groups on tree nuts, herbs and spices at Step 7 pending finalization of the revision of the Classification of Foods and Animal Feeds (para. 91);
- agreed to return the entry for "Edible Flowers" under the commodity group "Herbs" to Step 6 for comments and consideration at the next session of the Committee (para. 92 and Appendix VII);
- agreed to proceed with the elaboration of new groups for several types of vegetables for comments and consideration at its next session (para. 101);
- agreed to hold the draft Principles and Guidance for the Selection of Representative Commodities for the Extrapolation of Maximum Residue Limits for Pesticides for Commodity Groups (including Table 1 on fruit commodities) at Step 7 pending the finalization of the revision of the Classification of Foods and Feeds as per the fruit commodity groups (para. 111 and Appendix IX);
- agreed that the IAEA would continue to support the maintenance of the web-based method database with a direct link to the Codex website (para. 123);

- agreed that Member Countries should monitor the presence of lindane in food commodities and to provide data to JMPR within a period of 2 years for JMPR to review the monitoring data in 2015 prior to decision of conversion of MRLs to EMRLs (para. 150);
- agreed that CCPR could not solve the problem of resource issues faced by JMPR in the provision of scientific advice to CCPR and that this issue should be raised by Member Countries at the highest level including the next session of the Codex Alimentarius Commission (paras. 154-155);
- agreed that, in relation to the capacity of JMPR to provide scientific advice to CCPR, the Working Group on Priorities should consider ranking the compounds eligible for Periodic Review on the basis of health risks to assist in the establishment of the Priority List at the next session of the Committee (para. 156);

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LIST OF ABBREVIATIONS

(Used in this Report)

ADI	Acceptable Daily Intake
ARfD	Acute Reference Dose
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
CXL	Codex Maximum Residue Limit for Pesticide
DIE	Daily Intake Estimate
EFSA	European Food Safety Authority
EMRL	Extraneous Maximum Residue Limit
EU	European Union
EWG	Electronic Working Group
FAO	Food and Agricultural Organization of the United Nations
GAP	Good Agricultural Practice in the Use of Pesticides
GEMS/Food	Global Environment Monitoring System - Food Contamination Monitoring and Assessment Programme
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
JECFA	Joint FAO/WHO Expert Committee on Food Additives
JMPR	Joint FAO/WHO Meetings on Pesticide Residues
MRL	Maximum Residue Limit
OECD	Organization 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

INTRODUCTION

1. The Codex Committee on Pesticide Residues (CCPR) held its 43rd Session in Beijing, China, from 4 to 9 April 2011 at the kind invitation of the Government of the People's Republic of China. Professor Xiongwu Qiao, Vice-Director of the Shanxi Academy of Agricultural Sciences chaired the session, assisted by Dr Weili Shan, Director of Residue Division of Institute for Control of Agrochemicals, Ministry of Agriculture. The Session was attended by 189 delegates representing 58 Member Countries, 1 Member Organization and Observers from 7 international organizations. The list of participants is attached as Appendix I.

OPENING OF THE SESSION

2. The Session was opened by Mr Chen Xiaohua, Vice-Minister of Agriculture of the People's Republic of China. Mr Xiaohua extended his sincere appreciation to FAO and WHO for their support and assistance and welcomed all delegates. He indicated that China, as host country of Committee on Pesticide Residues, will continuously enhance cooperation with other countries and make its due contribution to advancing agricultural development in the world.

Division of Competence¹

3. The Committee noted the division of competence between the European Union (EU) 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

4. The Committee agreed to consider Agenda Item 11 *Revision of the Risk Analysis Principles Applied by the Codex Committee on Pesticide Residues* after Agenda Item 5 *Draft and Proposed Draft Maximum Residue Limits for Pesticides in Foods and Feeds* and adopted the Provisional Agenda as the Agenda for the Session.

In-session working groups

5. The Committee agreed to establish an in-session Working Group on Methods of Analysis, chaired by Australia to consider: 1) the revision of the Guidelines on the Estimation of Uncertainty of Results for the Determination of Pesticide Residues (Agenda Item 10a); 2) the recommendations of the Discussion Paper on how to address Methods of Analysis for Pesticide Residues by the CCPR (Agenda Item 10b); and 3) the opportunity to convene an expert consultation to provide scientific guidance on the development of performance characteristics for multi-residue analysis and proposed terms of reference for the consultation as requested from the Committee on Residues of Veterinary Drugs in Foods (Agenda Item 3).

6. The Committee also agreed to establish an in-session Working Group on Priorities, chaired by Australia, to consider the revision of the Priority List (Agenda Item 12a) as well as the recommendations on the status of Codex MRLs for Lindane (Agenda Item 12b).

APPOINTMENT OF RAPPORTEURS (Agenda Item 2)

7. The Committee appointed Mr David Lunn (New Zealand) and Mr Kevin Bodnaruk (Australia) to act as rapporteurs.

MATTERS REFERRED TO THE COMMITTEE BY THE CODEX ALIMENTARIUS COMMISSION AND CODEX COMMITTEES (Agenda Item 3)³

8. The Committee noted matters for information and agreed that the revision of the Risk Analysis Principles applied by the Codex Committee on Pesticide Residues in relation to their consistency with the Working Principles for Risk Analysis and their applicability to animal feed should be considered in the framework of the ongoing revision of the Risk Analysis Principles (Agenda Item 11).

9. As regards the revision of the definition of "hazard" in the Procedural Manual, the Committee noted that this proposal was related to nutrient risk assessment and that the 32nd Session of the Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU) had already decided not to amend the definition. The Committee agreed that further discussion on this matter was no longer necessary.

¹ CRD 2 (EU Division of Competence).

² CX/PR 11/43/1.

³ CX/PR 11/43/2 and CX/PR 11/43/2-Add.1. Comments from Kenya (CRD 5) and Argentina (CRD 18). Report of the in-session Working Group on Methods of Analysis (CRD 30).

10. In reply to the request from the Committee on Residues of Veterinary Drugs in Foods (CCRVDF), the in-session Working Group on Methods of Analysis had considered the paper on the development of performance characteristics for multi-residue analysis methods for veterinary drugs in foods and the Committee agreed with the recommendation of the working group that a clearly described request and more background information were necessary for making any specific recommendations for discussion at its future sessions.

REPORT ON ITEMS OF GENERAL CONSIDERATION BY THE 2010 JOINT FAO/WHO MEETINGS ON PESTICIDE RESIDUES (JMPR) (Agenda Item 4a)⁴

2.1 Consideration regarding JMPR capacity and resources

11. The FAO JMPR Secretariat gave a brief introduction about the issue of JMPR capacity and resources, and suggested that information in Chapter 2.1 could be helpful when discussing this issue under Agenda item 13(a). The WHO JMPR Secretariat informed delegates that in WHO, the provision of scientific advice is not supported by the core budget but by voluntary contributions from member states. He further informed the Committee that WHO does not have the secured resources to conduct the JMPR related activities in 2012.

2.2 Need for appropriate consumption data

12. The Committee was advised that the JMPR assessment of the dietary exposure is a crucial step in the risk assessment process for pesticides and it can be at the origin of concerns between member states and the Codex Alimentarius. During its last meeting, the JMPR recommended that WHO collect new data on large portions to improve the ability for JMPR assessment to cover a wide range of national consumption patterns. The World Health Organization, with the help of its network of Collaborating Centres, has launched a call to collect these data. WHO urged the delegates to follow up on this issue within their respective countries and to raise the attention of the competent authorities to answer this call.

13. The Committee noted that new data would be provided by Thailand and EU member states. The Delegation of Australia proposed that a call for data be distributed to ensure that all competent authorities will be informed.

2.3 Update about the GEMS/Food programme

14. The Committee was informed that the GEMS/Food programme aims to collect data on food consumption and on the occurrence of chemicals in food. A new web based application was developed this year with the support of the US Food and Drug Administration. This system will allow member states to upload their data directly on the WHO website and will also allow the competent authorities to access the WHO database.

2.4 Information on the use of pesticides required for the estimation of residue levels in minor crops

15. The Committee was informed that the 2010 JMPR reviewed the residue data on minor crops conducted in a number of developing countries and submitted by the Pesticides Initiative Programme (PIP). However, no approved label or an official letter including the authorized GAP was provided from the responsible government agency. The JMPR evaluated the submitted residue data, and conditionally made recommendations for maximum residue levels for some minor crops, leaving the final decision on acceptance to the CCPR. The JMPR emphasized that the official use patterns are one of the essential requirements and that data submitters should comply with the requirements as specified in the FAO Manual.

16. The Delegation of Kenya expressed their appreciation to the JMPR for its consideration of the need for Codex MRLs to be established for minor crops and the diverse GAPs in developing countries. The Delegation of Kenya committed to provide the necessary information on the officially recognized /authorized GAPs, including labels by April, 2011 and suggested advancing the proposed maximum residue limits.

2.5 Principles and guidance on the selection of representative crops for the extrapolation of MRLs

17. As requested by the 42nd Session of the CCPR, the 2010 JMPR reviewed the text of the proposed principles and guidance on the selection of representative crops for the extrapolation of MRLs to commodity groups and provided further guidance on how it estimates group maximum residue levels. The JMPR commented that the guidance will be particularly useful during the planning stages of supervised trials to ensure that the residue data will be sufficient to support group MRLs.

18. The Delegation of the EU supported the initiative to establish clear rules for extrapolations, but was not in favour of extrapolating the highest MRL for the subgroup with the most critical residue situation to the whole crop group.

⁴ Section 2 of the 2010 JMPR Report. Comments from Kenya (CRD 5); EU (CRD 15); and China (CRD 19).

2.6 Statistical calculation of MRLs

19. The Committee noted that the March 2010 version (30/03/2010) of the OECD MRL Calculator was provided to JMPR for use at its 2010 Meeting (in conjunction with the current NAFTA Calculator). Further comments were provided based on JMPR experiences in using the calculator. The Meeting concluded that the tested version of the OECD Calculator is a helpful tool to supplement expert judgement and to promote consistency in the elaboration of MRLs.

20. The Delegation of the EU shared the view of the JMPR that the OECD MRL calculator is a valuable tool supporting the experts in deriving MRL proposals. However, expert judgment is also important, in particular in cases where the number of trials data is limited and the residue trials do not fully reflect the critical GAPs.

21. The Delegation of Australia informed the Committee that the OECD MRL Calculator has been approved and published by OECD.

22. The Committee agreed to recommend JMPR to use the OECD calculator as a tool to support expert judgment when proposing MRLs.

2.7 Appropriate value from replicate samples from a supervised field trial for use in statistical calculation of the MRL estimate

23. The Committee noted that the JMPR had reconsidered its practice of using the highest value from replicate samples of a given field trial and from 2011, would use the average of replicate field trial residue values in establishing the data set for statistical calculation of maximum residue level estimates. However, JMPR also noted that the interpretation of the estimate must take into account individual replicate values contributing to the data set that exceed the estimate. The Committee supported this new approach.

2.8 The application of proportionality in selecting data for MRL estimation

24. In order to increase the size of the residue database supporting an MRL, the possibility of use a proportionality approach when selecting data for MRL estimation was identified by the JMPR based on the analysis of 10 years residue trial data. The Meeting decided it would only consider the method of proportionality under certain conditions, as outlined in Chapter 2.8 of the 2010 Report. Further discussion was scheduled under Agenda Item 6.

2.9 Further consideration of expert judgement in evaluating residue trials

25. The Committee noted that a new approach was discussed by the JMPR for the prediction of pesticide residue concentrations in food and feed commodities from foliar-treated crops based on zero day data. The approach was used as an adjunct to other considerations and statistical calculations in estimating maximum residue levels.

2.10 Use of the OECD Feed Table

26. The Committee was informed that some further modifications of the OECD feed table has been made by JMPR to avoid situations where commodities with unique codes might be treated as separate feed items. The 2010 JMPR replaced the Codex Commodity Codes allocated to the OECD feed items by the more general Codex Group Codes and corrected some of the Codex Group Codes allocated by the 2009 JMPR. It was noted that these changes did not impact on the existing Codex Classification System, nor on the OECD feed table.

2.11 Training of scientists from developing countries for the establishment of pesticide maximum residue levels in foods and assessment of the risk from dietary intake of residues

27. The Committee was informed that the FAO JMPR Panel developed a Training Manual to meet the need of developing countries for training in the evaluation of pesticide residues. The Training Manual is intended for use at training workshops and also for self-guided study. The Training Manual was used in the international training course held by FAO in November 2010. More regional workshops have been scheduled in 2011 based on the successful experience of the first international training.

28. Many countries, in particular developing countries, expressed their appreciation to FAO for its effort in developing the Training Manual and conducting training courses fostering a better understanding of establishment of pesticide maximum residue levels in foods and assessment of the risk from dietary intake of residues. The Committee encouraged FAO and WHO to continue to provide such technical support to member countries.

REPORT ON 2010 JMPR RESPONSES TO SPECIFIC CONCERNS RAISED BY CCPR (Agenda Item 4b)⁵

29. 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.

30. The Committee expressed its appreciation to JMPR for their work and pointed out that the work of JMPR was essential and important for the CCPR.

DRAFT AND PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES IN FOODS AND FEEDS AT STEPS 7 AND 4 (Agenda Item 5)⁶**GENERAL**

31. The Delegation of the EU, supported by Norway, informed the Committee that they had concerns regarding the extrapolations used by the 2010 JMPR to propose crop group MRLs. The Delegation also informed the Committee that an updated version of its extrapolation guidance was published on the European Commission website⁷. While supporting the use of extrapolation, the EU considered that in some cases the key elements for extrapolation (existing, comparable GAP and similar residue behaviour) did not exist. In such cases the EU considered that individual commodity MRLs were preferable to setting group MRLs to avoid setting MRLs higher than necessary. The Committee agreed to consider these concerns when discussing the relevant compounds.

ENDOSULFAN (32)

32. The Committee decided to advance the proposed draft MRL for tea, green, black (black, fermented and dried) for adoption at Step 5/8 and to recommend subsequent revocation of the associated CXL.

PARAQUAT (57)

33. The Committee noted that JMPR had responded to the concern form submitted by the EU in 2010 on their acute intake concern for dried beans and potatoes, and that JMPR had confirmed that the short term dietary intake of paraquat from its uses on pulses and potato was unlikely to present a public health concern.

CHLOROTHALONIL (81)

34. The Committee decided to retain the CXLs for banana; cherries; common bean (pods and/or immature seeds); cranberry; onion, bulb; peach; peppers, chilli, dried; peppers, sweet (including pimento or pimiento) and tomato for four years under the periodic review, noting the manufacturers would submit supporting data for these commodities.

35. The Committee noted the reservations of the Delegations of the EU and Norway on the proposed draft MRLs for brussels sprouts due to a lower MRL of 5 mg/kg derived from use of the OECD calculator, for cucumber due to an insufficient data set, for gherkin; summer squash and root and tuber vegetables due to the extrapolation used by JMPR.

36. The Committee also noted the request from the EU for JMPR to conduct a short term dietary intake risk assessment for chlorothalonil in leeks.

37. The Committee agreed to advance all the proposed draft MRLs to Step 5/8 and to recommend revocation of the CXLs for barley; barley straw and fodder, dry; beans (dry); broccoli; brussels sprouts; cabbages head; carrot; cauliflower; celery; celery leaves; cucumber; currants, black, red, white; grapes; melon, except watermelon; parsley; peanut; potato; squash, summer; sugar beet; sweet corn (corn on the cob); wheat; wheat straw and fodder, dry and winter squash as recommended by 2010 JMPR, noting that the manufacturer will submit new data for carrots.

DINOCAP (87)

38. The Delegation of Australia informed the Committee that dinocap and meptyldinocap were closely related compounds and that the CXL for dinocap needed to be revised to accommodate residues from the use of meptyldinocap, as recommended by the 2010 JMPR.

⁵ Section 3 of the 2010 JMPR Report.

⁶ CX/PR 11/43/3; CX/PR 11/43/3-Corrigendum; CX/PR 11/43/3-Add.1 (comments from Australia, Brazil, Canada, Iran and Thailand). Additional comments from Kenya (CRD 5); EU (CRDs 14, 16, and 17); and China (CRD 19).

⁷ http://ec.europa.eu/food/plant/protection/resources/publications_en.htm

39. The Committee agreed to recommend the revision of the existing CXL for fruiting vegetables; cucurbits, to exclude cucumber; squash, summer and melons, except watermelons, and to recommend higher proposed draft MRLs at Step 5/8 for cucumber; melon, except watermelon and squash, summer to support uses of meptyldinocap (244), following the evaluation for meptyldinocap by the JMPR.

40. The Committee also agreed that the source of the residue should be indicated for each proposed draft MRL.

CHLORPYRIFOS-METHYL (90)

41. The Committee decided to advance the draft MRLs for edible offal (mammalian); eggs; grape pomace, dry; meat (from mammals other than marine mammals); milk fats; milks; poultry meat and poultry, edible offal of for adoption to Step 8 and to delete the CXLs for cattle fat; cattle meat; cattle, edible offal of; chicken fat; chicken meat and chicken, edible offal of as they would be replaced by commodity group MRLs.

42. The Committee also agreed to retain the draft MRLs for barley; oats; rice; wheat; wheat bran, unprocessed and wheat, germ at Step 7 awaiting the 2012 JMPR review of alternative GAP for cereal grains.

43. The Committee noted that the Delegation of Egypt would provide data for JMPR evaluation to support a higher MRL of 0.1 mg/kg for potato.

CYPERMETHRINS (including alpha- and zeta- cypermethrin) (118)

44. The Committee was informed by the Delegation of Thailand that data supporting the draft MRL for asparagus had been already submitted to JMPR.

TRIAZOPHOS (143)

45. The Committee was informed by the JMPR Secretariat that a short-term intake concern for rice, husked could not be excluded based on the 2010 JMPR evaluation and that there were no data available to support a review of an alternative GAP. The Delegation of China informed the Committee that processing data for rice, husked would be submitted next year for the 2013 JMPR evaluation. The Committee agreed to hold the proposed draft MRL of 2 mg/kg for rice, husked at Step 4 due to short term intake concern.

46. The Committee decided to advance the proposed draft MRL for soya bean (immature seeds) to Step 5/8 and the draft MRL for soya bean (young pod) with a new commodity code VP 0546 to Step 8, as these commodities were not considered animal feeds and therefore not affected by the lack of animal metabolism studies and no residue definition for animal commodities.

CADUSAFOS (174)

47. The Committee decided to advance the proposed draft MRL for banana to Step 5/8 with the subsequent revocation of the associated CXL, and to recommend the withdrawal of the CXL for potato as recommended by the 2010 JMPR.

BIFENTHRIN (178)

48. The Committee decided to advance the proposed draft MRLs for banana; blackberries; brassica (cole or cabbage) vegetables, head cabbage, flowerhead brassicas; citrus fruits; cotton seed; dewberries (including boysenberry and loganberry); edible offal (mammalian); eggplant; hops, dry; maize; maize fodder (dry); meat (from mammals other than marine mammals); milk fats; milks; mustard greens; pea hay or pea fodder (dry); peppers; peppers chilli, dried; pulses; radish leaves (including radish tops); rape seed; rape seed oil, edible; raspberries, red, black; root and tuber vegetables; tea, green, black (black, fermented and dried); tomato; tree nuts; wheat; wheat bran, unprocessed and wheat germ to Step 5/8.

49. The Committee noted that the Delegations of the EU and Norway expressed their reservation on the advancement of the proposed draft MRLs for brassica (cole or cabbage) vegetables, head cabbage, flowerhead brassicas and pulses due to the data extrapolation used by JMPR and for hops, dry; tea, green, black (black, fermented and dried) due to insufficient number of trials.

50. The Committee also noted that the manufacturer would submit supporting data for barley, barley straw and fodder, dry, and decided to retain these CXLs under 4 years Periodic Review Procedure.

51. The Committee decided to recommend the revocation of the CXLs for cattle fat; cattle kidney; cattle liver; cattle meat; cattle milk; chicken eggs; chicken fat; chicken meat; chicken, edible offal of; grapefruit; hops, dry; lemon; maize; orange, sweet; pear; potato; wheat flour; wheat bran, unprocessed; wheat straw and fodder, dry; wheat wholemeal, as some of them were being replaced by group MRLs.

52. The Committee decided to advance the proposed draft MRLs for mango, okra and papaya to Step 5, awaiting the authorized GAP to be submitted by Kenya.

53. Due to short term intake concern identified by JMPR, the Committee decided to retain the proposed draft MRL for strawberry at Step 4, awaiting data from the manufacturer to support a review of alternative GAP by JMPR in 2014.

FENPYROXIMATE (193)

54. The Committee decided to advance the proposed draft MRLs for citrus fruit; cucumber; dried grapes (=currants, raisins and sultanas); fruiting vegetables other than cucurbits, except sweet corn and mushrooms; grapes; melons, except watermelon; peppers chilli, dried; pome fruit and tree nuts to Step 5/8.

55. The Committee decided to recommend the revocation of the CXLs for apple and oranges, sweet and sour (including orange-like hybrids); several cultivars, as these were being replaced by commodity group MRLs.

HALOXYFOP (194)

56. The Committee decided to advance all draft MRLs to Step 8 with the subsequent revocation of the associated CXLs, noting the reservation of the Delegations of the EU and Norway due to chronic intake concern for children, arising from their national evaluation. The Delegation of the EU informed the Committee that a concern form will be submitted in due time.

FENBUCONAZOLE (197)

57. The Committee decided to retain all draft MRLs at Step 7, awaiting ARfD evaluation by 2012 JMPR.

FLUDIOXONIL (211)

58. The Committee decided to advance all proposed draft MRLs to Step 5/8 with the subsequent deletion of the existing CXL for citrus fruits.

INDOXACARB (216)

59. The Committee decided to retain existing CXL for lettuce, leaf awaiting alternative GAP review by 2011 JMPR.

NOVALURON (217)

60. The Committee decided to advance all proposed draft MRLs to Step 5/8 for adoption noting the reservations of the Delegations of the EU and Norway regarding the MRL for brassica (cole or cabbage) vegetable, head cabbage, flowerhead brassicas; fruiting vegetable, cucurbits; fruiting vegetable other than cucurbits (except sweet corn); stone fruits due to the extrapolation used by JMPR and the subsequent revocation of the associated CXLs for edible offal (mammalian); eggs; milk fats; milks; poultry meat; poultry, edible offal of.

61. The Committee also decided to delete the CXL for Tomato which was being replaced by the Group MRL as recommended by the 2010 JMPR.

BIFENAZATE (219)

62. The Committee decided to advance all proposed draft MRLs to Step 5/8 for adoption noting the reservation of the Delegations of the EU and Norway regarding the MRL for legume vegetable due to the extrapolation used by JMPR.

BOSCALID (221)

63. The Committee decided to advance all proposed draft MRLs to Step 5/8 for adoption with the subsequent of revocation of the CXL for leafy vegetables, noting the reservations of the Delegations of the EU and Norway regarding the MRLs for leafy vegetable; stalk and stem vegetables due to the extrapolation used by JMPR.

64. The Committee noted that the proposed draft MRL of 50 mg/kg for citrus oil was not in the database and requested the Delegation of Netherlands to allocate the code for citrus oil to resolve this issue.

65. The Committee therefore assigned a new code for citrus oil, edible OR 0001.

DIFENOCONAZOLE (224)

66. The Committee decided to advance the proposed draft MRL for papaya to Step 5 awaiting authorized GAP to be submitted by Kenya.

67. The Committee also decided to advance all other proposed draft MRLs to Step 5/8 for adoption, including those MRLs for common bean and peas (with pod) that were recommended by 2010 JMPR but listed in the database as legume vegetables with the subsequent revocation of the existing CXLs for edible offal (mammalian); meat (from mammals other than marine mammals) and milks.

CHLORANTRANILIPROLE (230)

68. The Committee decided to advance all proposed draft MRLs to Step 5/8 and the subsequent revocation of the associated CXLs for edible offal (mammalian); eggs; meat (from mammals other than marine mammals); milk fats; milks and poultry, edible offal of, noting the reservations of the Delegations of the EU and Norway regarding the extrapolation used by JMPR for brassica (cole or cabbage) vegetables, head Cabbage, flowerhead brassicas.

69. The Committee also decided to revoke the CXL for grapes as recommended by the 2010 JMPR to be replaced by a group CXL.

FLUOPICOLIDE (235)

70. The Committee decided to advance all draft MRLs to Step 8 for adoption, noting that acute intake concern expressed by the Delegations of the EU and Switzerland in 2010 had been considered by JMPR and their conclusions were presented in chapter 3 of the 2010 JMPR report.

CLOTHIANIDIN (238)

71. The Committee noted that clothianidin is also a metabolite of thiamethoxam (245) and that new data to support a reconsideration of the residue definition were available from the manufacturer for consideration by JMPR in 2011.

72. The Committee decided to advance the proposed draft MRL for banana; dried grapes; edible offal (mammalian); eggs; grapes; mammalian fats (except milk fats); meat (from mammals other than marine mammals); milks; pome fruits; poultry fats; poultry meat; rice; root and tuber vegetable; sorghum; sorghum straw and fodder dry; stalk and stem vegetables; sugar cane; and sweet corn (corn on the cob) to Step 5 because the source of the residue is clothianidin, for which the residue definition is being reconsidered.

73. The Committee decided to advance all other proposed draft MRLs to Step 5/8 noting the reservation of the Delegations of the EU and Norway regarding the extrapolation used by JMPR for berries and other small fruits; brassica (cole or cabbage) vegetables, head cabbage, flower-head brassicas; root and tuber vegetables and stone fruits.

CYPROCONAZOLE (239)

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

DICAMBA (240)

75. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8, noting that the manufacturer will be submitting revised labels to support the assessment of residue data for soya beans by the 2011 JMPR.

ETOXAZOLE (241)

76. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8. The Delegation of the USA indicated that they would lodge a concern form over storage stability correction factors for assessed commodities for which no MRLs were recommended and the Committee noted that the manufacture will submit supporting information on storage stability for evaluation by the 2011 JMPR.

FLUBENDIAMIDE (242)

77. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8 noting the reservations of the Delegations of the EU and Norway regarding the proposed draft MRLs for brassica (cole or cabbage) vegetables, head cabbage, flowerhead brassicas; fruiting vegetables, cucurbits; legume vegetables, stone fruits due to the extrapolations used by JMPR and for peppers; tomato and tea, green, black (black, fermented and dried) due to insufficient number of trials.

FLUOPYRAM (243)

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

MEPTYLDINOCAP (244)

79. The Committee decided to advance all proposed draft MRLs to Step 5/8 and agreed that the source of the residue be indicated for each proposed MRL. The Committee noted that the residue definition of meptyldinocap for MRL compliance was corrected to align it with the JMPR recommendation.

THIAMETHOXAM (245)

80. The Committee decided to advance all the proposed draft MRLs for adoption at Step 5/8 in line with the recommendations for clothianidin (238) noting the reservations of the Delegations of the EU and Norway regarding the extrapolations used by JMPR for berries and other small fruits; brassica (cole or cabbage) vegetables, head cabbage, flowerhead brassicas; citrus fruits; fruiting vegetables other than cucurbits; fruiting vegetables, cucurbits; leafy vegetables; root and tuber vegetables and stone fruits.

81. The Committee noted that the Delegation of Brazil would submit data and GAP for papaya to JMPR to support a higher MRL.

DISCUSSION PAPER ON THE APPLICATION OF PROPORTIONALITY IN SELECTING DATA FOR MRL ESTIMATION (Agenda Item 6)⁸

82. The Committee recalled that at its last session it had noted the concerns expressed by a delegation that JMPR had not recommended MRLs for some commodities as application rates in supporting residue trials were more than 25% greater than the critical GAP (cGAP) application rates (the JMPR/OECD cut-off point). The Committee agreed that the Delegation of Australia would prepare a discussion paper to address the application of proportionality in selecting data for MRL estimation for consideration at its next session.⁹

83. The Delegation of Australia made a presentation based on the information provided in CX/PR 11/43/4 including practical examples of application of proportionality based on types and rates of application, chemical/commodity combinations and associated MRLs. The Delegation drew the attention of the Committee to the recommendation in the working paper by which JMPR could apply proportionality in those cases where the residue data according to GAP were not sufficient for a recommendation. The Delegation noted that this approach would give greater flexibility to JMPR in the use of residue field trial data and would allow MRL estimates to be made in situations where the current $\pm 25\%$ rules excluded such estimates.

84. The Committee noted that there was general support for the application of proportionality by using supporting residue trials with application rates beyond $\pm 25\%$ in those cases where the residue data according to GAP were not sufficient for a recommendation. However, it was noted that this situation usually applied to minor crops and should therefore be limited to these crops as opposed to major crops where availability of data usually allowed for normal residue evaluations. It was also noted that, when applying proportionality, all data points under consideration, i.e. within/outside the acceptable range of $\pm 25\%$, should be adjusted to 1X to prevent issues of bias. It was further noted that the concept of proportionality should be further tested to ensure reliable results before the Committee endorse this approach for use by JMPR. It would thus be helpful to gather information on what compound/crop combinations the proportionality principles could apply, statistical methods used, number of tests needed, criteria for application of the proportionality method, etc.

85. The FAO JMPR Secretariat informed the Committee that relevant information on the proportionality approach was provided by the 2010 JMPR (General Consideration 2.8 of the 2010 JMPR Report). In this regard, the 2010 JMPR had also recommended principles for use of proportionality, including general aspects, commodity and application types, etc. The 2010 JMPR Report also presented examples on how to use these principles and the statistical method.

⁸ CX/PR 11/43/4. Comments from the EU (CRD16). Section 2.8, 2010 JMPR Report.

⁹ ALINORM 10/33/24 paras 72-73.

Conclusion

86. The Committee agreed that it would be useful if JMPR could elaborate MRLs proposals with and without making use of the concept of proportionality so that the result could be compared and that this exercise could be done as part of the general consideration issues of the 2011 JMPR for discussion by the next session of the Committee.

DRAFT REVISION OF THE CLASSIFICATION OF FOODS AND ANIMAL FEEDS: TREE NUTS, HERBS AND SPICES (Agenda Item 7a)¹⁰

87. The Committee recalled that the Draft Revision had been adopted by the Commission at Step 5, circulated for comments at Step 6 and revised by an electronic working group led by the Netherlands and the United States of America. The Delegation of the Netherlands highlighted the commodities which had been added to the lists as a result of the proposals made at the last session and in the working group. On the basis of these proposals, the Committee made the following amendments and comments to the Classification.

Tree Nuts

88. Under Pine Nuts, following the addition of "other *Pinus* species", the Committee agreed to exclude *Pinus armandii* and *Pinus massoniana* as the nuts have a bitter taste and are not fit for consumption.

Herbs

89. The Committee confirmed the inclusion of Wild betel leaf bush, proposed at the last session. The following additions were also made in square brackets for further consideration: Calendula leaves [and flowers]; Geranium (lemon rose); and Pepper, leaves which might also be included under leafy vegetables. It was agreed to insert a new sub-group "Edible Flowers" in square brackets for further comments and consideration at the next session. Some editorial amendments and corrections were also made to the section.

Spices

90. Under "Root or Rhizome", the Committee confirmed the inclusion of Lovage, roots proposed at the last session. Under "Citrus Peel", it was agreed to replace Yuzu peel with Yuja peel as the main common name for *Citrus junos*.

STATUS OF THE DRAFT REVISION OF THE CLASSIFICATION OF FOODS AND ANIMAL FEEDS: TREE NUTS, HERBS AND SPICES

91. The Committee agreed to hold the three commodity groups: tree nuts, herbs and spices at Step 7 pending finalization of the revision of the Classification (Appendix VI).

92. The Committee agreed to return the new entry for "Edible Flowers" to Step 6 for comments and consideration at the next session (Appendix VII).

PROPOSED DRAFT REVISION OF THE CLASSIFICATION OF FOODS AND ANIMAL FEEDS: ASSORTED TROPICAL AND SUB-TROPICAL FRUITS - EDIBLE PEEL AND ASSORTED TROPICAL AND SUB-TROPICAL FRUITS - INEDIBLE PEEL (Agenda Item 7b)¹¹

93. The Committee recalled that its last session had established an electronic working group led by the Netherlands and the United States of America to prepare new proposals for the revision of the Classification. The Delegation of the Netherlands introduced the new drafts for Assorted Tropical and Sub-Tropical Fruits- edible peel and Assorted Tropical and Sub-Tropical Fruits- inedible peel, and highlighted the main amendments. The title of the group had been amended to "Miscellaneous Fruits" instead of "Tropical and Sub-Tropical Fruits" and the category "Assorted Tropical and Sub-Tropical Fruits - edible peel" had been divided into three sub-groups: small, large and palms.

94. The Committee agreed with the proposal from several delegations to retain the title "Assorted tropical and sub-tropical fruits" as it was more representative of the commodities concerned, the term "miscellaneous" would allow the inclusion of other fruits that were not tropical, and this would affect the selection of representative commodities.

¹⁰ CX/PR 11/43/5; CX/PR 11/43/5-Add.1 (comments from Canada, Cuba and Thailand). Additional comments from Kenya (CRD 5); EU (CRD 14); Nigeria (CRD 20); and Republic of Korea (CRD 25).

¹¹ CX/PR 11/43/6, CX/PR 11/43/6-Add.1 (comments from Canada, Costa Rica, Cuba, Japan and Thailand). Additional comments from Panama (CRD 3); Republic of Korea (CRD 4); Kenya (CRD 5); EU (CRD 14); China (CRD 19); Nigeria (CRD 20); and Mali (CRD 21).

Assorted tropical and sub-tropical fruits - edible peel

95. Some delegations proposed to transfer jujube, Chinese to the group for stone fruit as it was more similar to that group and grew in temperate climates. It was retained in square brackets for further consideration.

96. Some delegations proposed to transfer kumquats and limequats to the citrus fruits group as they are classified as citrus taxonomically and they are traded as such in Asia. Other delegations did not support this amendment as this would result in many MRLs for citrus becoming applicable to kumquat although it has an edible peel, which is not the case of other citrus species. The Committee agreed to retain kumquats and limequats in square brackets for further consideration.

97. Some delegations proposed to transfer persimmon to the pome fruits group in view of their botanical characteristics, climatic growing conditions, trade and pesticide residue pattern, and noted that the inclusion in the group for tropical fruits would result in a decrease in the number of MRLs available. The Committee agreed that further consideration should be given to the consequences of such a change as regards the establishment of MRLs and persimmon was retained in square brackets for further consideration.

98. It was proposed to transfer tamarind to the "inedible smooth peel-large" group as tamarind peel is hard and inedible, and it was placed in square brackets for further discussion.

Assorted tropical and sub-tropical fruits - inedible peel

99. The following species was placed in square brackets for further consideration: Madras thorn, which has a pod similar to tamarind; two additional synonyms for the scientific name of langsat; and sapodilla. Baobab fruit was inserted as an alternative to monkey bread. It was also agreed to insert a specific entry for coconut, young in the sub-group for palms.

STATUS OF THE PROPOSED DRAFT REVISION OF THE CLASSIFICATION OF FOODS AND ANIMAL FEEDS: ASSORTED TROPICAL AND SUB-TROPICAL FRUITS - EDIBLE PEEL AND ASSORTED TROPICAL AND SUB-TROPICAL FRUITS - INEDIBLE PEEL

100. The Committee agreed to advance the Proposed Draft Revision to Step 5 for adoption by the 34th Session of the Codex Alimentarius Commission (Appendix VIII).

101. The Committee agreed to reconvene the electronic working group led by the Netherlands and the United States to proceed with the elaboration of new drafts of the groups for several types of vegetables for comments at Step 3 and consideration at the next session.

DRAFT PRINCIPLES AND GUIDANCE FOR THE SELECTION OF REPRESENTATIVE COMMODITIES FOR THE EXTRAPOLATION OF MAXIMUM RESIDUE LIMITS FOR PESTICIDES FOR COMMODITY GROUPS (Agenda Item 8a)¹²**PROPOSED DRAFT ADDENDA TO THE DRAFT PRINCIPLES AND GUIDANCE FOR THE SELECTION OF REPRESENTATIVE COMMODITIES FOR THE EXTRAPOLATION OF MAXIMUM RESIDUE LIMITS FOR PESTICIDES FOR COMMODITY GROUPS (Agenda Item 8b)¹³**

102. The Committee recalled that at its last session it had revised the Principles and Guidance including Table 1 – Example of the Selection of Representative Commodities and had forwarded the revised text to the 33rd Session of the Commission for adoption at Step 5. The Commission adopted the document as proposed by the Committee and advanced it to Step 6 for comments and finalization by the next session of the Committee. It was also recalled that Addendum I – Justification on bulb vegetables and fruiting vegetables other than cucurbits and Addendum II – Background information regarding representative commodities had been returned to Steps 2/3 for revision, comments and further consideration by the next session of the Committee. The Committee had also agreed to re-establish the electronic working group led by the Netherlands and the United States of America to revise Table 1 and the Addenda based on the comments submitted and the considerations made in plenary.

¹² CX/PR 11/43/7; CX/11/43/7-Add.1 (comments from Canada, Cuba and Japan). Additional comments from Kenya (CRD 5); Colombia (CRD 9); European Union (CRD 15); China (CRD 19); and Mali (CRD 21).

¹³ CX/PR 11/43/8.

103. The Committee noted that the working group had produced two revised documents as contained in CX/PR 11/43/7 (Principles and Guidance including Table 1) and CX/PR 11/43/8 (Addenda). The Committee also noted that the two items were correlated and agreed to discuss them together. The Delegation of the United States of America introduced both documents and gave a brief summary of the main outcome of the discussions in the working group. In this regard, it was noted that Table 1 had been revised by including fruit commodity groups with a view to facilitating the finalization of the Principles/Guidance and Table 1 (fruit types) at the next session of the Committee vis-à-vis the corresponding fruit commodity groups in the Classification of Foods and Animal Feeds and the decision of the 42nd Session of the Committee that, if all fruit types were completed by 2012, consideration would be given to advancing them to Step 8 for final adoption by the Commission and inclusion in the Classification of Foods and Animal Feeds¹⁴.

104. The Committee agreed that Table 1 should be an integral part of the final document. However, the information contained in the Addenda was considered useful supportive information for the development of Table 1 (Addendum I) and to provide background information on the development of the document (Addendum II) but they should not be part of the final document. The Committee noted that this information was available in the reports and relevant working documents prepared for the discussion of this item at different sessions of the Committee and that Codex documents were available for consultation on the Codex website. As a result, the Committee agreed to delete or adjust all references to Addenda I and II in the document.

105. The Committee noted that the reference to "*similar* (as opposed to *same*) use pattern or GAP" for the selection of representative commodities covered by a group MRL was entered to provide for some degree of flexibility in the application of the Principles and that this term was limited to the relevant provisions provided for in the *FAO Manual on the Submission and Evaluation of Pesticide Residue Data for the Estimation of Maximum Residue Level in Food and Feed*.

Consideration of the Principles and Guidance

106. The Committee made a number of amendments by removing or transferring some provisions to other sections as not necessary or more relevant for the given section.

107. The Delegation of the EU noted that extrapolation of results of residue trials is a possibility to establish MRLs for crops/commodities for which the number of trials would not be sufficient to derive individual MRLs. However, the setting of MRLs by extrapolation introduced an additional source of uncertainty. Therefore, extrapolation should be restricted to cases where the GAP was comparable and similar residue behaviour was expected. If available residue trials demonstrated that the use of a pesticide would result in different residue concentrations in the crops belonging to the same crop group, it is preferable to derive individual MRLs instead of extrapolating the highest MRL calculated for the crop with the highest residue to the other members of the commodity group. In these cases, the ALARA Principles should be applied to set MRLs at appropriate lower levels. Based on this consideration, the Committee agreed to introduce a reference to the ALARA Principles when considering representative commodity to extrapolate to other members of a commodity group.

Consideration of Table 1

108. The Committee agreed to change the title to more appropriately reflect the purpose of and information contained in Table 1. In Group 001 Citrus Fruits, the Committee agreed that, in order to extrapolate maximum residue limits for pesticides to the whole citrus fruits group (FC 0001), data should be provided on lemon or lime; and mandarin; and orange; and pummelo or grapefruit. In lemons and limes (FC 0002), the name of "yuzu" was changed to "yuja" for consistency with the discussion on this commodity under Agenda Item 7(b) (see para. 90).

109. In Group 003 Stone Fruits, apricot was added as an alternative representative commodity to peach for extrapolation of MRLs to the whole stone fruits group (FP 0009) hence a consequential amendment was made to Subgroup 003C, Peaches. It was noted that in some countries apricot was the commodity most likely to contain the highest residues. It was however noted that peaches have large cultivation areas in many countries therefore the decision on which commodity would be considered as representative of the relevant group could be taken based on information provided on dietary consumption and/or production area.

110. In Group 006 Assorted Tropical and Subtropical Fruits – inedible peel, the reference to "dragonfruit" was changed to "pitahaya" for consistency with Subgroup 006D, Assorted tropical and sub-tropical, inedible peel – cactus where pitahaya, as opposed to dragonfruit, was indicated as a representative commodity for inedible peel – cactus (FI 2024). Along these lines, "Spanish lime" was included in addition to "litchi" in the general Group 006 for consistency with Subgroup 006A, Assorted Tropical and Sub-tropical, inedible peel, small where Spanish lime was indicated as a representative commodity for inedible peel – small (FI 2021). In this regard, the Committee agreed to include longans as a representative commodity in addition to litchi as they were similar to litchis in morphology, growth habit, pest problems, similar GAPs, and edible portion for the determination of the residue. In addition, longans produce similar or higher residues than litchis and were widely produced and traded within the Asian region.

¹⁴ ALINORM 10/33/24, para. 104.

STATUS OF THE DRAFT PRINCIPLES AND GUIDANCE ON THE SELECTION OF REPRESENTATIVE COMMODITIES FOR THE EXTRAPOLATION OF MRLS TO COMMODITY GROUPS

111. The Committee agreed to hold the Draft Principles and Guidance (including Table 1 on fruit commodities) at Step 7 pending the finalization of the revision of the Classification of Foods and Animal Feeds as per the fruit types (Appendix IX).

DISCUSSION PAPER ON THE GUIDANCE TO FACILITATE THE ESTABLISHMENT OF MAXIMUM RESIDUE LIMITS FOR PESTICIDES FOR MINOR USE AND SPECIALTY CROPS (Agenda Item 9)¹⁵

112. The Delegation of the United States of America, as Chair of the electronic Working Group on Minor Use and Specialty Crops, introduced the document highlighting the major issues associated with the establishment of maximum residue limits for pesticides for minor use and specialty crops as presented in CX/PR 11/43/9. As regards the definition of minor use and specialty crops, the Delegation recalled that the last session of the Committee did not endorse the recommendation for guidance from JMPR on the number of residue field trials necessary to perform the evaluation as there was not an agreed international definition nor any agreed data requirements for minor use. The Delegation noted that there is currently no agreement on a definition due to difficulties in reaching consensus as per what could be considered a minor use and specialty crop vis-à-vis the production and consumption of the same commodity in different countries and regions. In view of this, criteria as opposed to definition, for use by CCPR and JMPR to determine the minimum number of field trials necessary to support the establishment of MRLs for minor use and specialty crops could be more appropriate to assist member countries in the identification of minor use/specialty crops and the submission of data to JMPR.

113. Several delegations supported the development of criteria for use by CCPR/JMPR and generally favoured the dietary intake contribution and total production/cultivation area as relevant criteria to address risk assessment for the establishment of MRLs for minor use and specialty crops. Therefore, economic factors should not be taken into account when further developing the criteria. Some of these delegations noted that the development of criteria could later on assist in the elaboration of a definition for minor use and specialty crops that could then be agreed upon by Codex members.

114. In regard to the two criteria identified, several delegation were of the opinion that, in order to provide for more flexibility in their application worldwide, the cut off figures for dietary intake contribution and the total production area should rather be expressed in percentages of the global total daily diet (based on GEMS Food Data) and of the world food production (based on FAOSTAT) however a higher tonnage production than currently presented in the discussion paper should be considered.

115. The Delegation of the EU noted that clarity was needed on the terminology used in the discussion paper to address these commodities i.e. minor use, minor crops and specialty crops. The Delegation indicated that the terms minor/major crops are used to define a food safety issue and the number of trials necessary for MRLs setting hence the daily intake contribution and cultivation area are relevant criteria to identify minor crops. In this regard, the Delegation noted that the discussion paper did not clearly differentiate between minor crop and minor use and that the latter was more related to the economic return on the use of a pesticide in relation to the registration costs which in no case would reduce the number of trials required for the establishment of MRLs for the minor crop. It was noted that, in this framework, there could be major crops with minor use and vice-versa. The delegation also noted that the discussion paper neither clearly differentiate between "minor crop" and "specialty crop" and that both terms should clearly be understood for the purposes of MRLs setting by CCPR.

Conclusion

116. Based on the above considerations, the Committee agreed to re-establish the electronic working group chaired by the United States of America and co-chaired by Kenya and Thailand to work on the development of criteria for use by CCPR and JMPR to determine the minimum number of field trials necessary to support the establishment of MRLs for minor crops/specialty crops in order to facilitate data submission to JMPR. The Committee agreed that the electronic working group will hold a meeting prior to the 44th Session of the CCPR and that both the electronic and physical working groups will work in English only.

PROPOSED DRAFT REVISION OF THE GUIDELINES ON THE ESTIMATION OF UNCERTAINTY OF RESULTS FOR THE DETERMINATION OF PESTICIDE RESIDUES (Agenda Item 10a)¹⁶

117. The Committee recalled that its last session had agreed to return the proposed draft Guidelines to Step 3 for consideration at this session.

¹⁵ CX/PR 11/43/9. Comments from Kenya (CRD 5); CropLife (CRD 6); Thailand (CRD 8); Colombia (CRD 9); Argentina (CRD 10); China (CRD 19); Nigeria (CRD 20); Mali (CRD 21); EU (CRD 22); and OECD (CRD 29).

¹⁶ CX/PR 11/43/10; CX/PR 11/43/10-Add.1 (Comments from Canada and Cuba). Additional comments from Kenya (CRD 5); Colombia (CRD 9); Japan (CRD 13); EU (CRD 15); China (CRD 19); Mali (CRD 21); and Japan (CRD 23). Report of the in-session Working Group on Methods of Analysis (CRD 30).

118. The Delegation of Australia, as Chair of the in-session Working Group on Methods of Analysis, introduced CRD 30 which contained a revised version of the Guidelines on the estimation of uncertainty of results for the determination of pesticide residues.

119. The Delegation of Egypt pointed out that uncertainty of sampling and sampling preparation should be considered as in many cases it would be larger than that of analytical measurement and proposed the inclusion of a default uncertainty component for sampling in the Guidelines. The Committee was reminded that, in general, sampling is outside the control of analytical laboratories and that the estimation of sampling uncertainty is outside the scope of these Guidelines. Uncertainty associated with laboratory sample preparation is normally expected to be addressed and incorporated as part of the method validation process for specific food commodities. It was noted that the question of sampling uncertainty had been considered in the Committee on Methods of Analysis and Sampling (CCMAS) from a general point of view.

120. The Delegation also indicated that, in addition to the Guidelines applicable to pesticide residues, there were Guidelines on measurement uncertainty developed by the CCMAS, which would cause confusion and that one harmonized guideline rather than several guidelines should be developed. The Committee however recalled that the Guidelines on Measurement Uncertainty (GL 54-2004) were of general application, while the Guidelines discussed in CCPR are specific guidelines for the determination of pesticide residues.

STATUS OF THE PROPOSED DRAFT REVISION OF THE GUIDELINES ON THE ESTIMATION OF UNCERTAINTY OF RESULTS FOR THE DETERMINATION OF PESTICIDE RESIDUES (ANNEX TO CAC/GL 59-2006)

121. The Committee agreed to forward the revised Proposed Draft Guidelines to the 34th Session of the Commission for adoption at Step 5/8 (Appendix X).

DISCUSSION PAPER ON HOW TO ADDRESS METHODS OF ANALYSIS FOR PESTICIDE RESIDUES BY THE CODEX COMMITTEE ON PESTICIDE RESIDUES (Agenda Item 10b)¹⁷

122. The Committee recalled that at its last session it had agreed to consider the status of the repository list of analytical methods maintained by the IAEA and the implications of maintaining the list as either a resource list or as preferred/ obligatory methods at this session.

123. The Delegation of Australia, as Chair of the in-session working group, referred to CRD 30. The Committee agreed with the recommendation of the working group to revoke *Analysis of Pesticide Residues: Recommended Methods* (CODEX STAN 229-1993) and that the IAEA would continue to support the maintenance of the web-based method database with a direct link from the Codex website.

REVISION OF THE RISK ANALYSIS PRINCIPLES APPLIED BY THE CODEX COMMITTEE ON PESTICIDE RESIDUES (Agenda Item 11)¹⁸

124. The Committee recalled that its last session had returned the Revision for redrafting by an electronic working group led by Argentina in the light of the comments received, to identify issues of concern and prepare proposals on how to resolve these issues.

125. The Delegation of Argentina recalled the initial mandate of the working group when the revision of the Risk Analysis Principles was initiated in 2008 and summarized the main discussions held in the Committee so far. The Delegation highlighted the main issues for consideration, especially the revision of the Periodic Review Procedure, and the reordering of the text in order to align it with the Working Principles for Risk Analysis, as discussed in the Committee on General Principles. As regards section 5.5 Periodic Review Procedure, two alternative proposals had been put forward.

126. The Committee agreed to focus on the alternative proposals for the revision of the periodic review. Many delegations supported the first alternative as they considered MRL setting should be consistent with general Codex texts and the Working Principles for Risk Analysis and therefore MRLs should not be revoked without scientific justification. These delegations also pointed out that retaining MRLs which were still valid would save resources for the purpose of risk assessment and would limit potential trade problems.

127. Many other delegations expressed the view that the periodic review was based on science and should be retained especially for the following reasons: MRLs should be revised when GAP change; MRLs for foods of animal origin should be revised as appropriate to take into account the update of the OECD Feedstuffs Derived from Crops Table in 2009; and JMPR should consider establishing an ARfD for the older compounds.

¹⁷ CX/PR 11/43/11. Report of the in-session Working Group on Methods of Analysis (CRD 30).

¹⁸ CX/PR 11/43/12, CX/PR 11/43/12-Add.1 (comments from Argentina, Brazil, Canada, Chile, Japan, Uruguay and CropLife International). Additional comments from Kenya (CRD 5); Colombia (CRD 9); Chile (CRD); Uruguay (CRD 12); Argentina (CRD 18); China (CRD 19); Nigeria (CRD 20); Mali (CRD 21); Australia (CRD 24); and Brazil (CRD 28).

128. Some delegations pointed out that MRLs could always be revised when new data became available and therefore both alternatives could be considered provided the conditions for revision or revocation of MRLs were clearly specified on a scientific basis.

129. The Delegation of Australia indicated that in CRD 24 they had proposed an approach that would allow existing CXLs to be retained without a residue re-evaluation provided a toxicological assessment by JMPR does not raise any health concerns; dietary exposure estimates are below the ADI and the ARfD; and there is evidence of GAP relevant to existing CXLs. The Delegation also highlighted the role of the priorities working group to give advance notice of the periodic re-evaluation and the need for providing relevant data in a timely manner.

130. The Committee considered whether the rest of the document could be reviewed at the current session. However several delegations pointed out that it would be preferable to resolve the issue of the periodic review before reviewing the text as a whole to ensure consistency with the Working Principles for Risk Analysis.

131. Following further consultations between interested countries, the Committee considered a new proposal put forward by Brazil in CRD 28 as a basis for future discussion of the periodic review, as follows:

- 1) When a CXL is not supported by the manufacturers: the interested member countries can support the MRL submitting the GAP or to provide new residue data and GAP to JMPR for a new recommendation.
- 2) When the whole compound is not supported by the manufacturers: the interested member countries can support the re-evaluation of the compound by submitting residue data and the monograph of toxicological data to JMPR. If the monograph is not enough, JMPR can request for additional data.

The Delegation of Brazil also suggested to request JMPR advice on the minimum data requirement for submission in case the complete toxicological database was not available (e.g. summary data).

132. The Committee agreed that reference to monographs referred to national monographs of toxicological data for submission to JMPR.

133. The Committee also agreed to use these proposals as a basis for further work, with the understanding that more detailed discussion would be needed to develop specific recommendations.

134. The Observer from CropLife expressed the view that both recommendations seemed to conflict with JMPR responsibilities as they implied that JMPR would work with reduced data sets for the re-evaluation of MRLs; it was unclear how JMPR could update dietary risk assessment based only on GAP; JMPR can only make an informed decision when they have access to the full data set as currently required and to what extent they need to make use of these data has to be decided on a case-by-case. The Observer expressed concern that these changes may undermine the public confidence in Codex MRL, and generally supported retaining the principle of the current Periodic Review Procedure, with possible amendments for clarification purposes.

135. The JMPR Secretariat recalled that data requirements for submission to JMPR were already defined and applied to any set of data submitted for assessment; when any information was missing, the submissions would be evaluated on a case by case basis; and only nationally approved GAP should be submitted to JMPR. Toxicological monographs would not need to be re-submitted, but only updated additional information, including toxicological data if available.

136. The Committee discussed how to proceed further. Some delegations pointed out that the revision of the periodic review might affect other sections of the document and therefore the Risk Analysis Principles as a whole should also be revised concurrently, according to the initial mandate of the Committee. The Chair also recalled that the revision should be completed by 2013 in accordance with the Strategic Plan 2008-2013.

Conclusion

137. The Committee therefore agreed to re-convene the electronic working group chaired by Argentina and Brazil, working in English and Spanish, to develop proposals for the revision of the periodic review as a priority and, if feasible, to review the entire text of the Risk Analysis Principles, for consideration by the next session. It was also agreed that, if necessary, a physical working group chaired by Argentina and Brazil and working in English would be held prior to the next session in order to facilitate discussion in the plenary. The Delegation of Brazil emphasized the importance of effective participation and contribution of member countries in the work of the working group in order to advance work on the revision of the Risk Analysis Principles.

ESTABLISHMENT OF THE PRIORITY LISTS OF PESTICIDES (Agenda Item 12a)¹⁹

138. The Delegation of Australia, as Chair of the in-session Working Group on Priorities introduced the report of the working group. The Chair mentioned the addition of new information on registration status, expected residues and residue trials available in order to help setting priorities. He also mentioned new appendixes to the schedule, mentioning compounds which are no longer supported by industry (Table 5) and commodities which are no longer supported by industry (Table 6). These two appendixes will increase the transparency and will allow member states to be prepared to support compounds and commodities no longer supported by industry.

Periodic Re-evaluation

139. Procymidone (136) and Vinclozolin (159) are no longer supported by industry and member countries. Therefore, the Committee decided that all CXLs for these 2 compounds should be revoked.

140. After some discussions and adjustments, the Committee agreed on the Priority List for 2012 provided as Appendix XI.

Scheduling of chemicals

141. The Committee was informed that 12 chemicals had been nominated for inclusion on the schedule for new compounds and periodic re-evaluation for 2012. The Chair listed the seven new chemical evaluations (ametoctradin, chlorfenapyr, dinotefuran, fluxapyroxad, MCPA, picoxystrobin, sedaxane), and the five chemicals listed for periodic re-evaluation (bentazone, cycloxydim, dichlorvos, fenvalerate, glufosinate-ammonium). The delegations of Thailand and the United States of America confirmed their support to the re-evaluation of fenvalerate which is no longer supported by the primary manufacturer.

142. The Committee nominated 21 chemicals for follow-up evaluations namely fenbuconazole for consideration of the establishment of an ARfD and 20 substances for MRLs in additional commodities (buprofezin, captan, carbofuran, chlorothalonil, chlorpyrifos-methyl, cyfluthrin, cyproconazole, cyromazine, 2,4-D, dithiocarbamates-mancozeb, fludioxynil, flupyram, imidacloprid, methoxyfenozide, oxamyl, phorate, spinetoram, thiacloprid, thiamethoxate and trifloxystrobin).

143. The Committee was informed that this number of compounds exceed the possibilities of the JMPR regarding the establishment of MRLs. It was therefore proposed by Croplife to postpone the periodic re-evaluation of residue limits for bentazone until 2013 but to keep this compound for toxicological re-evaluation in 2012. The Committee was advised that with these adjustments, the 2012 schedule had reached its quota and technically could not accept any further nominations.

144. The Committee noted the chemicals listed for new evaluation and follow-up evaluation for the years 2013 to 2018 and that for 2013, 12 new compounds are listed for evaluation and 13 compounds are listed for periodic re-evaluation. This is clearly exceeding the capacities of the JMPR. Moreover, the Committee also noted that more than 40 substances are already on the list for periodic re-evaluation following the rule of 15 years. The Committee agreed to give the mandate to the Working Group on Priorities to propose a list of 2 to 3 chemicals every year, from the full list of substances candidate for periodic re-evaluation, based on their potential higher concern regarding public health.

145. The Chair indicated that the work of the EWG for 2012 would commence in August with the broadcast email to all member countries and observers. In that correspondence, the Chair will highlight chemicals for which there is no manufacturer support and chemicals for which commodity listings are required. The Chair will also propose a re-ordering of the list of chemicals candidate for periodic re-evaluation based on the potential health concerns. The Committee agreed to reconvene the electronic working group chaired by Australia for 2012.

CONSIDERATION OF THE STATUS OF CODEX MRLs for LINDANE (Agenda Item 12b)²⁰

146. The Delegation of Australia, as Chair of the on in-session Working Group on Priorities introduced this item vis-à-vis the relation between the status of Codex MRLs for lindane and the Priority List as per the eligibility of this compound for re-evaluation in the future.

147. The Committee noted that lindane is currently listed in Annex A of the Stockholm Convention by which Parties must take measures to eliminate the production and use of the chemicals listed under this Annex. The Committee considered the possible replacement of the existing lindane MRLs with EMRLs based on the different options provided for in the discussion paper.

¹⁹ CX/PR 11/14/13 & CX/PR 11/14/13-Add.1. CX/PR 11/14/13-Add.2 (comments from Brazil, Canada and Uruguay). Additional comments from Kenya (CRD 5); EU (CRD 14); Mali (CRD 21); Australia (CRD 26); and the Democratic People's Republic of Korea (CRD 27).

²⁰ CX/PR 11/43/14. Comments from Kenya (CRD 5) and Croplife (CRD 7).

148. The Committee noted that several signatory countries of the Stockholm Convention had not yet ratified the revision of Annex A and that decisions taken at the Convention did not have an immediate effect on the work of the Committee on Pesticide Residues which should follow the procedures laid down in the Procedural Manual, i.e. Risk Analysis Principles applied by CCPR, for the revocation of CX MRLs or the conversion of Codex MRLs into EMRLs.

149. A number of delegations informed the Committee that uses of lindane for agricultural purposes are prohibited in their countries. Some of these delegations noted that, as this compound is a persistent organic pollutant in the environment (e.g. soil), presence of lindane in foods may warrant monitoring.

Conclusion

150. The Committee agreed that, because lindane is prohibited in certain countries and is also persistent in the environment, member states should monitor presence of lindane in food commodities and to provide data to JMPR within a period of 2 years for JMPR to review the monitoring data in 2015 prior to decision of conversion of MRLs to EMRLs.

DISCUSSION PAPER ON JMPR RESOURCE ISSUES IN THE PROVISION OF SCIENTIFIC ADVICE TO CCPR (Agenda Item 13a)²¹

151. The Delegation of the United States of America presented the discussion paper on the resource issues faced by JMPR, as requested by the 42nd Session of the CCPR and also referred to information and comments provided by the 2010 JMPR (General Consideration, section 2.1). The Delegation highlighted that the demand on JMPR has increased in recent years and the resource constraints are limiting the number of reviews able to be completed each year with the review schedule for new chemicals is expected to be at capacity up to 2014.

152. The discussion paper identified three primary issues of concern: funding, the availability of expertise, and the timing/frequency of JMPR meetings. The Committee noted that this increase in demand is indicative of the success of the process improvements that have been implemented in the past several years by the CCPR and the improved decision-making process in CCPR. The Committee agreed that lack of funding and the availability of expertise must be addressed before any of the options suggested in the paper could be implemented (such as holding more frequent meetings and increasing the number of experts.)

153. Various opinions presented at the discussion on the points raised in the paper. The JMPR Secretariat mentioned that there is an option for member countries to provide targeted funding for JMPR under the Scientific Advice Initiatives.

Conclusion

154. The Committee concluded that the CCPR itself could not solve the problem, but need to be addressed at high level.

155. The Committee agreed that the JMPR resource issues should be raised by the member countries of FAO and WHO at the highest level possible, and that member countries could express their concerns at the next session of the Codex Alimentarius Commission.

156. In light of the large number of compounds eligible for periodic review, the Committee agreed that, the electronic Working Group on Priorities should consider ranking them on the basis of health risks to assist setting the priority list at the next meeting.

ASSESSMENT OF MRLS FOR PESTICIDES IN TEA (Agenda Item 13b)²²

157. The Committee was informed that the FAO Intergovernmental Group (IGG) on Tea has proposed to change the risk assessment associated with in the establishment of MRLs of pesticides in tea and the analytical methods used to identify the presence of pesticides in tea from the leaf to brew, or to pay equal attention to both, the leaf and brew, to provide correct and direct information to consumers as tea was used to make an infusion in water in most cases. The Committee noted that the rationale for this proposal was presented in CX/PR 11/43/16.

158. The JMPR Secretariat noted that transfer of residues into tea infusion is already part of risk assessment and information on standard procedure of testing methodology and relevant scientific studies (in particular processing factors) would be welcome. The Secretariat also advised that MRLs are set on tea leaves, not on tea brew as the leaves are the product commonly and internationally traded.

159. Some delegations informed the Committee that tea was an important crop in their countries and they might submit data and information if requested.

²¹ CX/PR 11/43/15. Comments from Kenya (CRD 5) and Australia (CRD 26).

²² CX/PR 11/43/16.

Conclusion

160. The Committee emphasized the need for processing studies to refine the dietary risk assessment of tea and supported the comments of the FAO JMPR Secretariat.

DATE AND PLACE OF THE NEXT SESSION (Agenda Item 14)

161. The Committee was informed that its 44th Session was tentatively scheduled to be held in Shanghai, China, in April 2012, the final arrangements being subject to confirmation by the Host Country and the Codex Secretariat.

SUMMARY STATUS OF WORK

Subject	Step	Action by	Reference REP11/PR
Draft MRLs for pesticides	8	Governments 34 th CAC	Paras. 31 - 81 and Appendix II
Proposed Draft MRLs for pesticides	5/8	Governments 34 th CAC	Paras. 31 – 81 and Appendix III
Proposed Draft Revision of the Guidelines on the Estimation of Uncertainty of Results for the Determination of Pesticide Residues (Annex to CAC/GL 59-2006)	5/8	Governments 34 th CAC	Para. 121 and Appendix X
Draft Revision of the Classification of Foods and Animal Feeds: Tree Nuts, Herbs and Spices	7	44 th CCPR [awaiting the finalization of the revision of the Classification of Foods and Animal Feeds – fruit commodity groups]	Para. 91 and Appendix VI
Draft Principles and Guidance for the Selection of Representative Commodities for the Extrapolation of Maximum Residue Limits for Pesticides for Commodity Groups (including Table 1 on fruit commodities)	7	44 th CCPR [awaiting the finalization of the revision of the Classification of Foods and Animal Feeds – fruit commodity groups]	Para. 111 and Appendix IX
Draft Revision of the Classification of Foods and Animal Feeds: Herbs - Edible Flowers	6	Governments EWG (The Netherlands and the United States of America) 44 th CCPR	Para. 92 and Appendix VII
Proposed Draft MRLs for pesticides	5	Governments 34 th CAC 44 th CCPR	Paras. 31 – 81 and Appendix IV
Proposed Draft Revision of the Classification of Foods and Animal Feeds: Assorted Tropical and Sub-tropical Fruits – edible peel and Assorted Tropical and Sub-tropical Fruits – inedible peel	5	Governments 34 th CAC EWG (The Netherlands and the United States of America) 44 th CCPR	Para. 100 and Appendix VIII
Proposed Draft Revision of the Classification of Foods and Animal Feeds: Other vegetable commodity groups	2/3	EWG (The Netherlands and the United States of America) Governments 44 th CCPR	Para. 101
Establishment of Codex Priority Lists of Pesticides (Evaluation of New Pesticides and Pesticides under the Periodic Re-evaluation)	1/2/3	34 th CAC Governments EWG on Priorities (Australia) 44 th CCPR	Para. 140 and Appendix XI
Codex Maximum Residue Limits for pesticides Recommended for Revocation	-----	Governments 34 th CAC	Paras. 31 – 81 and Appendix V
Analysis of Pesticide Residues: Recommended Methods (CODEX STAN 229-1993) Recommended for Revocation	-----	Governments 34 th CAC	Para. 123

Subject	Step	Action by	Reference REP11/PR
Application of Proportionality in Selecting Data for MRL Estimation	-----	2011 JMPR 44 th CCPR	Para. 86
Methods of analysis for pesticide residues by the Codex Committee on Pesticide Residues	-----	IAEA Codex Secretariat	Para. 123
Revision of the Risk Analysis Principles applied by the Codex Committee on Pesticide Residues	-----	EWG (Argentina and Brazil) Governments 44 th CCPR	Para. 137
Consideration of the status of Codex MRLs for Lindane	-----	Governments 2015 JMPR 48 th CCPR (2016)	Para. 150
Assessment of MRLs for Pesticides in Tea	-----	Governments JMPR	Paras. 158 and 160
Discussion Paper on the Guidance to facilitate the establishment of Maximum Residue Limits for Pesticides for Minor Use and Specialty Crops	-----	EWG (The United States of America with the assistance of Kenya and Thailand) 44 th CCPR	Para. 116

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APPENDIX II

DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

(At Step 8)

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
90	Chlorpyrifos-Methyl			
	MO 0105 Edible offal (mammalian)	0.01	8	
	PE 0112 Eggs	0.01 (*)	8	
	AB 0269 Grape pomace, Dry	5	8	
	MM 0095 Meat (from mammals other than marine mammals)	0.1 (fat)	8	
	ML 0106 Milks	0.01 (*)	8	
	FM 0183 Milk fats	0.01 (*)	8	
	PO 0111 Poultry, Edible offal of	0.01 (*)	8	
	PM 0110 Poultry meat	0.01 (fat)	8	
143	Triazophos			
	VP 0546 Soya bean (young pods)	1	8	
194	Haloxfop			
	VP 0061 Beans, except broad bean and soya bean	0.5	8	
	VD 0071 Beans (dry)	3	8	
	VD 0524 Chick-pea (dry)	0.05	8	
	FC 0001 Citrus fruits	0.02 (*)	8	
	SO 0691 Cotton seed	0.7	8	
	MO 0105 Edible offal (mammalian)	2	8	
	PE 0112 Eggs	0.1	8	
	AM 1051 Fodder beet	0.4	8	
	FB 0269 Grapes	0.02 (*)	8	
	MM 0095 Meat (from mammals other than marine mammals)	0.5 (fat)	8	
	ML 0106 Milks	0.3	8	
	FM 0183 Milk fats	7	8	
	AL 0697 Peanut fodder	5	8	
	VD 0072 Peas (dry)	0.2	8	
	VP 0063 Peas (pods and succulent=immature seeds)	0.7	8	
	VP 0064 Peas, Shelled (succulent seeds)	1	8	
	FP 0009 Pome fruits	0.02 (*)	8	
	PO 0111 Poultry, Edible offal of	0.7	8	
	PM 0110 Poultry meat	0.7 (fat)	8	
	SO 0495 Rape seed	3	8	
	VD 0541 Soya bean (dry)	2	8	
	VR 0596 Sugar beet	0.4	8	
	SO 0702 Sunflower seed	0.3	8	
235	Fluopicolide			
	VB 0041 Cabbages, Head	7	8	
	VS 0624 Celery	20	8	
	VL 0053 Leafy vegetables	30	8	

APPENDIX III

PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

(At Step 5/8)

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
32	Endosulfan			
	DT 1114 Tea, Green, Black (black, fermented and dried)	10	5/8	
81	Chlorothalonil			
	VB 0402 Brussels sprouts	6	5/8	
	VS 0624 Celery	20	5/8	
	VC 0424 Cucumber	3	5/8	
	FB 0021 Currants, Black, Red, White	20	5/8	
	MO 0105 Edible offal (mammalian)	0.2	5/8	
	VB 0042 Flowerhead brassicas (includes Broccoli: Broccoli, Chinese and Cauliflower)	5	5/8	
	VC 0425 Gherkin	3	5/8	
	FB 0268 Gooseberry	20	5/8	
	FB 0269 Grapes	3	5/8	
	VA 0384 Leek	40	5/8	
	MF 0100 Mammalian fats (except milk fats)	0.07	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.02	5/8	
	VC 0046 Melons, except watermelon	2	5/8	
	ML 0106 Milks	0.07	5/8	
	VA 0386 Onion, Chinese	10	5/8	
	VA 0387 Onion, Welsh	10	5/8	
	FI 0350 Papaya	20	5/8	
	SO 0697 Peanut	0.1	5/8	
	PO 0111 Poultry, Edible offal of	0.07	5/8	
	PF 0111 Poultry fats	0.01	5/8	
	PM 0110 Poultry meat	0.01	5/8	
	PO 0113 Poultry skin	0.01	5/8	
	VD 0070 Pulses	1	5/8	
	VR 0075 Root and tuber vegetables	0.3	5/8	
	VA 0389 Spring Onion	10	5/8	
	VC 0431 Squash, summer	3	5/8	
	FB 0275 Strawberry	5	5/8	
87	Dinocap			
	VC 0424 Cucumber	0.07	5/8	
	VC 0046 Melons, except watermelon	0.5	5/8	
	VC 0431 Squash, summer	0.07	5/8	
143	Triazophos			
	VP 0541 Soya bean (immature seeds)	0.5	5/8	
174	Cadusafos			
	FI 0327 Banana	0.01	5/8	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>		<u>Step</u>	<u>Note</u>
178	Bifenthrin				
	FI 0327 Banana	0.1		5/8	
	FB 0264 Blackberries	1		5/8	
	VB 0040 Brassica (Cole or Cabbage) Vegetables, Head Cabbage, Flowerhead Brassicas	0.4		5/8	
	FC 0001 Citrus fruits	0.05		5/8	
	SO 0691 Cotton seed	0.5		5/8	
	FB 0266 Dewberries (including boysenberry and loganberry)	1		5/8	
	MO 0105 Edible offal (mammalian)	0.2		5/8	
	VO 0440 Egg plant	0.3		5/8	
	DH 1100 Hops, Dry	20		5/8	
	GC 0645 Maize	0.05 (*)		5/8	
	AS 0645 Maize fodder (dry)	15		5/8	
	MM 0095 Meat (from mammals other than marine mammals)	3	(fat)	5/8	
	ML 0106 Milks	0.2		5/8	
	FM 0183 Milk fats	3		5/8	
	VL 0485 Mustard greens	4		5/8	
	AL 0072 Pea hay or pea fodder (dry)	0.7		5/8	
	VO 0051 Peppers	0.5		5/8	
	HS 0444 Peppers Chili, dried	5		5/8	
	VD 0070 Pulses	0.3		5/8	
	VL 0494 Radish leaves (including radish tops)	4		5/8	
	SO 0495 Rape seed	0.05		5/8	
	OR 0495 Rapeseed oil, Edible	0.1		5/8	
	FB 0272 Raspberries, Red, Black	1		5/8	
	VR 0075 Root and tuber vegetables	0.05		5/8	
	DT 1114 Tea, Green, Black (black, fermented and dried)	30		5/8	
	VO 0448 Tomato	0.3		5/8	
	TN 0085 Tree nuts	0.05		5/8	
	GC 0654 Wheat	0.5	Po	5/8	
	CM 0654 Wheat bran, Unprocessed	2	PoP	5/8	
	CF 1210 Wheat germ	1	Po	5/8	
193	Fenpyroximate				
	VC 0424 Cucumber	0.03		5/8	
	FC 0001 Citrus fruits	0.5		5/8	
	DF 0269 Dried grapes (=currants, raisins and sultanas)	0.3		5/8	
	VO 0050 Fruiting vegetables other than cucurbits	0.2		5/8	Except sweet corn and mushrooms
	FB 0269 Grapes	0.1		5/8	
	VC 0046 Melons, except watermelon	0.05 (*)		5/8	
	HS 0444 Peppers Chili, dried	1		5/8	
	FP 0009 Pome fruits	0.3		5/8	
	TN 0085 Tree nuts	0.05 (*)		5/8	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>		<u>Step</u>	<u>Note</u>
211	Fludioxonil				
	FC 0001 Citrus fruits	10	Po	5/8	
	FI 0355 Pomegranate	2	Po	5/8	
	VR 0508 Sweet potato	10	Po	5/8	
	VR 0600 Yams	10	Po	5/8	
217	Novaluron				
	VD 0071 Beans (dry)	0.1		5/8	
	FB 0020 Blueberries	7		5/8	
	VB 0040 Brassica (Cole or Cabbage) Vegetables, Head Cabbage, Flowerhead Brassicas	0.7		5/8	
	VL 0464 Chard	15		5/8	
	VP 0526 Common bean (pods and/or immature seeds)	0.7		5/8	
	MO 0105 Edible offal (mammalian)	0.7		5/8	
	PE 0112 Eggs	0.1		5/8	
	VC 0045 Fruiting vegetables, Cucurbits	0.2		5/8	
	VO 0050 Fruiting vegetables other than cucurbits	0.7		5/8	Except sweet corn
	MM 0095 Meat (from mammals other than marine mammals)	10	(fat)	5/8	
	ML 0106 Milks	0.4		5/8	
	FM 0183 Milk fats	7		5/8	
	VL 0485 Mustard greens	25		5/8	
	PO 0111 Poultry, Edible offal of	0.1		5/8	
	PM 0110 Poultry meat	0.5	(fat)	5/8	
	DF 0014 Prunes	3		5/8	
	FS 0012 Stone fruits	7		5/8	
	FB 0275 Strawberry	0.5		5/8	
	GS 0659 Sugar cane	0.5		5/8	
219	Bifenazate				
	VD 0071 Beans (dry)	0.3		5/8	
	FB 0264 Blackberries	7		5/8	
	FB 0266 Dewberries (including boysenberry and loganberry)	7		5/8	
	VP 0060 Legume vegetables	7		5/8	
	FB 0272 Raspberries, Red, Black	7		5/8	
221	Boscalid				
	FC 0001 Citrus fruits	2		5/8	
	OR 0001 Citrus oil, edible	50		5/8	
	AB 0001 Citrus pulp, dry	6		5/8	
	DH 1100 Hops, Dry	60		5/8	
	VL 0053 Leafy vegetables	40		5/8	
	VS 0078 Stalk and Stem Vegetables	30		5/8	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
224	Difenoconazole			
	VP 0061 Beans, except broad bean and soya bean	0.7	5/8	
	MO 0105 Edible offal (mammalian)	0.2	5/8	
	VR 0604 Ginseng	0.5	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.05 (fat)	5/8	
	ML 0106 Milks	0.005 (*)	5/8	
	FI 0351 Passion fruit	0.05	5/8	
	VP 0063 Peas (pods and succulent=immature seeds)	0.7	5/8	
	TN 0085 Tree nuts	0.03	5/8	
230	Chlorantraniliprole			
	AL 1020 Alfalfa fodder	50	5/8	
	FB 0018 Berries and other small fruits	1	5/8	
	VB 0040 Brassica (Cole or Cabbage) Vegetables, Head Cabbage, Flowerhead Brassicas	2	5/8	
	FC 0001 Citrus fruits	0.5	5/8	
	MO 0105 Edible offal (mammalian)	0.2	5/8	
	PE 0112 Eggs	0.1	5/8	
	AS 0645 Maize fodder (dry)	25	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.2 (fat)	5/8	
	ML 0106 Milks	0.05	5/8	
	FM 0183 Milk fats	0.2	5/8	
	HH 0738 Mints	15	5/8	
	PO 0111 Poultry, Edible offal of	0.01 (*)	5/8	
	GS 0659 Sugar cane	0.5	5/8	
	VO 0447 Sweet corn (corn-on-the-cob)	0.01 (*)	5/8	
	TN 0085 Tree nuts	0.02	5/8	
238	Clothianidin			
	VS 0620 Artichoke, Globe	0.05	5/8	
	GC 0640 Barley	0.04	5/8	
	AS 0640 Barley straw and fodder, Dry	0.2	5/8	
	FB 0018 Berries and other small fruits	0.07	5/8	Except grapes
	VB 0040 Brassica (Cole or Cabbage) Vegetables, Head Cabbage, Flowerhead Brassicas	0.2	5/8	
	SB 0715 Cacao beans	0.02 (*)	5/8	
	VS 0624 Celery	0.04	5/8	
	SB 0716 Coffee beans	0.05	5/8	
	FC 0001 Citrus fruits	0.07	5/8	
	VC 0045 Fruiting vegetables, Cucurbits	0.02 (*)	5/8	
	VO 0050 Fruiting vegetables other than cucurbits	0.05	5/8	Except sweet corn
	VL 0053 Leafy vegetables	2	5/8	
	VP 0060 Legume vegetables	0.01 (*)	5/8	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
	MO 0099 Liver of cattle, goats, pigs & sheep	0.2	5/8	
	GC 0645 Maize	0.02	5/8	
	AS 0645 Maize fodder (dry)	0.01 (*)	5/8	
	SO 0088 Oilseed	0.02 (*)	5/8	
	FI 0350 Papaya	0.01 (*)	5/8	
	AL 0072 Pea hay or pea fodder (dry)	0.2	5/8	
	TN 0672 Pecan	0.01 (*)	5/8	
	HS 0444 Peppers Chili, dried	0.5	5/8	
	FI 0353 Pineapple	0.01 (*)	5/8	
	GC 0656 Popcorn	0.01 (*)	5/8	
	PO 0111 Poultry, Edible offal of	0.1	5/8	
	DF 0014 Prunes	0.2	5/8	
	VD 0070 Pulses	0.02	5/8	
	FS 0012 Stone fruits	0.2	5/8	
	DT 1114 Tea, Green, Black (black, fermented and dried)	0.7	5/8	
	GC 0654 Wheat	0.02 (*)	5/8	
	AS 0654 Wheat straw and fodder, Dry	0.2	5/8	
239	Cyproconazole			
	VD 0071 Beans (dry)	0.02 (*)	5/8	
	GC 0080 Cereal grains	0.08	5/8	Except maize, rice and sorghum
	MO 0105 Edible offal (mammalian)	0.5	5/8	
	PE 0112 Eggs	0.01 (*)	5/8	
	GC 0645 Maize	0.01 (*)	5/8	
	AS 0645 Maize fodder (dry)	2	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.02 (fat)	5/8	
	ML 0106 Milks	0.01	5/8	
	VD 0072 Peas (dry)	0.02 (*)	5/8	
	VP 0064 Peas, Shelled (succulent seeds)	0.01	5/8	
	PO 0111 Poultry, Edible offal of	0.01 (*)	5/8	
	PM 0110 Poultry meat	0.01 (*)	5/8	
	SO 0495 Rape seed	0.4	5/8	
	VD 0541 Soya bean (dry)	0.07	5/8	
	AL 0541 Soya bean fodder	3	5/8	
	OR 0541 Soya bean oil, Refined	0.1	5/8	
	AS 0081 Straw and fodder (dry) of cereal grains	5	5/8	Except maize, rice and sorghum
	VR 0596 Sugar beet	0.05	5/8	
240	Dicamba			
	VS 0621 Asparagus	5	5/8	
	GC 0640 Barley	7	5/8	
	AS 0640 Barley straw and fodder, Dry	50	5/8	
	SO 0691 Cotton seed	0.04 (*)	5/8	
	MO 0105 Edible offal (mammalian)	0.7	5/8	
	PE 0112 Eggs	0.01 (*)	5/8	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
	AS 0162 Hay or fodder (dry) of grasses	30	5/8	
	MF 0100 Mammalian fats (except milk fats)	0.07	5/8	
	GC 0645 Maize	0.01 (*)	5/8	
	AS 0645 Maize fodder (dry)	0.6	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.03	5/8	
	ML 0106 Milks	0.2	5/8	
	PO 0111 Poultry, Edible offal of	0.07	5/8	
	PF 0111 Poultry fats	0.04	5/8	
	PM 0110 Poultry meat	0.02	5/8	
	GC 0651 Sorghum	4	5/8	
	AS 0651 Sorghum straw and fodder, Dry	8	5/8	
	GS 0659 Sugar cane	1	5/8	
	VO 1275 Sweet corn (kernels)	0.02	5/8	
	GC 0654 Wheat	2	5/8	
	AS 0654 Wheat straw and fodder, Dry	50	5/8	
241	Etoxazole			
	AM 0660 Almond hulls	3	5/8	
	FC 0001 Citrus fruits	0.1	5/8	
	VC 0424 Cucumber	0.02	5/8	
	MO 0105 Edible offal (mammalian)	0.01 (*)	5/8	
	FB 0269 Grapes	0.5	5/8	
	DH 1100 Hops, Dry	15	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.01 (*) (fat)	5/8	
	ML 0106 Milks	0.01 (*)	5/8	
	HH 0738 Mints	15	5/8	
	DT 1114 Tea, Green, Black (black, fermented and dried)	15	5/8	
	TN 0085 Tree nuts	0.01 (*)	5/8	
242	Flubendiamide			
	AM 0660 Almond hulls	10	5/8	
	VB 0040 Brassica (Cole or Cabbage) Vegetables, Head Cabbage, Flowerhead Brassicas	4	5/8	
	VS 0624 Celery	5	5/8	
	SO 0691 Cotton seed	1.5	5/8	
	MO 0105 Edible offal (mammalian)	1	5/8	
	VC 0045 Fruiting vegetables, Cucurbits	0.2	5/8	
	FB 0269 Grapes	2	5/8	
	VP 0060 Legume vegetables	2	5/8	
	VL 0482 Lettuce, Head	5	5/8	
	VL 0483 Lettuce, Leaf	7	5/8	
	GC 0645 Maize	0.02	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	2 (fat)	5/8	
	ML 0106 Milks	0.1	5/8	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
	FM 0183 Milk fats	5	5/8	
	AL 0072 Pea hay or pea fodder (dry)	40	5/8	
	VO 0051 Peppers	0.7	5/8	
	HS 0444 Peppers Chili, dried	7	5/8	
	FP 0009 Pome fruits	0.8	5/8	
	VD 0070 Pulses	1	5/8	
	AL 0541 Soya bean fodder	60	5/8	
	FS 0012 Stone fruits	2	5/8	
	VO 0447 Sweet corn (corn-on-the-cob)	0.02	5/8	
	DT 1114 Tea, Green, Black (black, fermented and dried)	50	5/8	
	VO 0448 Tomato	2	5/8	
	TN 0085 Tree nuts	0.1	5/8	
243	Fluopyram			
	VC 0424 Cucumber	0.5	5/8	
	DF 0269 Dried grapes (=currants, raisins and sultanas)	5	5/8	
	MO 0105 Edible offal (mammalian)	0.7	5/8	
	FB 0269 Grapes	2	5/8	
	MM 0095 Meat (from mammals other than marine mammals)	0.1	5/8	
	ML 0106 Milks	0.07	5/8	
244	Meptyldinocap			
	VC 0424 Cucumber	0.07	5/8	
	FB 0269 Grapes	0.2	5/8	
	VC 0046 Melons, except watermelon	0.5	5/8	
	VC 0431 Squash, summer	0.07	5/8	
	FB 0275 Strawberry	0.3	5/8	
245	Thiamethoxam			
	VS 0620 Artichoke, Globe	0.5	5/8	
	FI 0327 Banana	0.02 (*)	5/8	
	GC 0640 Barley	0.4	5/8	
	AS 0640 Barley straw and fodder, Dry	2	5/8	
	FB 0018 Berries and other small fruits	0.5	5/8	
	VB 0040 Brassica (Cole or Cabbage) Vegetables, Head Cabbage, Flowerhead Brassicas	5	5/8	
	SB 0715 Cacao beans	0.02 (*)	5/8	
	VS 0624 Celery	1	5/8	
	FC 0001 Citrus fruits	0.5	5/8	
	SB 0716 Coffee beans	0.2	5/8	
	MO 0105 Edible offal (mammalian)	0.01 (*)	5/8	
	PE 0112 Eggs	0.01 (*)	5/8	
	VC 0045 Fruiting vegetables, Cucurbits	0.5	5/8	
	VO 0050 Fruiting vegetables other than cucurbits	0.7	5/8	
	VL 0053 Leafy vegetables	3	5/8	

<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
VP 0060 Legume vegetables	0.01 (*)	5/8	
GC 0645 Maize	0.05	5/8	
AS 0645 Maize fodder (dry)	0.05	5/8	
MM 0095 Meat (from mammals other than marine mammals)	0.02	5/8	
ML 0106 Milks	0.05	5/8	
SO 0088 Oilseed	0.02 (*)	5/8	
FI 0350 Papaya	0.01 (*)	5/8	
AL 0072 Pea hay or pea fodder (dry)	0.3	5/8	
TN 0672 Pecan	0.01 (*)	5/8	
HS 0444 Peppers Chili, dried	7	5/8	
FI 0353 Pineapple	0.01 (*)	5/8	
FP 0009 Pome fruits	0.3	5/8	
GC 0656 Popcorn	0.01 (*)	5/8	
PO 0111 Poultry, Edible offal of	0.01 (*)	5/8	
PM 0110 Poultry meat	0.01 (*)	5/8	
VD 0070 Pulses	0.04	5/8	
VR 0075 Root and tuber vegetables	0.3	5/8	
FS 0012 Stone fruits	1	5/8	
VO 0447 Sweet corn (corn-on-the-cob)	0.01 (*)	5/8	
DT 1114 Tea, Green, Black (black, fermented and dried)	20	5/8	
GC 0654 Wheat	0.05	5/8	
AS 0654 Wheat straw and fodder, Dry	2	5/8	

Recommended MRLs for Spices
(At Step 5/8)

Codex Number	Commodity	Pesticide	Recommended MRL mg/kg
028B	Fruit or berry	Carbaryl	0.8
		Carbendazim	0.1
		Cypermethrin	0.5
		Aldicarb	0.07
		Bifenthrin	0.03
		Carbosulfan	0.07
		Cyfluthrin	0.03
		Cyhalothrin	0.03
		Deltamethrin	0.03
		Fenvalerate	0.03
		Methidathion	0.02
		Methiocarb	0.07
		Methomyl	0.07
		Omethoate	0.02
		Oxamyl	0.07
		Profenofos	0.07
		Triazophos	0.07
028D	Root or rhizome	Deltamethrin	0.5
		Aldicarb	0.02
		Bifenthrin	0.05
		Captan	0.05
		Carbaryl	0.1
		Carbendazim	0.1
		Carbosulfan	0.1
		Cyfluthrin	0.05
		Cyhalothrin	0.05
		Fenvalerate	0.05
		Methidathion	0.05
		Methiocarb	0.1
		Omethoate	0.05
		Oxamyl	0.05
Profenofos	0.05		
Triazophos	0.1		

APPENDIX IV

PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES

(At Step 5)

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
178	Bifenthrin			
	FI 0345 Mango	0.5	5	
	VO 0442 Okra	0.2	5	
	FI 0350 Papaya	0.4	5	
224	Difenoconazole			
	FI 0350 Papaya	0.3	5	
238	Clothianidin			
	FI 0327 Banana	0.02	5	
	DF 0269 Dried grapes (=currants, raisins and sultanas)	1	5	
	MO 0105 Edible offal (mammalian)	0.02 (*)	5	Except liver
	PE 0112 Eggs	0.01 (*)	5	
	FB 0269 Grapes	0.7	5	
	MF 0100 Mammalian fats (except milk fats)	0.02 (*)	5	
	MM 0095 Meat (from mammals other than marine mammals)	0.02 (*)	5	
	ML 0106 Milks	0.02	5	
	FP 0009 Pome fruits	0.4	5	
	PF 0111 Poultry fats	0.01 (*)	5	
	PM 0110 Poultry meat	0.01 (*)	5	
	GC 0649 Rice	0.5	5	
	VR 0075 Root and tuber vegetables	0.2	5	
	GC 0651 Sorghum	0.01 (*)	5	
	AS 0651 Sorghum straw and fodder, Dry	0.01 (*)	5	
	VS 0078 Stalk and Stem Vegetables	0.04	5	Except artichoke and celery
	GS 0659 Sugar cane	0.4	5	
	VO 0447 Sweet corn (corn-on-the-cob)	0.01 (*)	5	

APPENDIX V

**CODEX MAXIMUM RESIDUE LIMITS FOR PESTICIDES RECOMMENDED FOR
REVOCATION**

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
32	Endosulfan			
	DT 1114 Tea, Green, Black (black, fermented and dried)	30	CXL-D	
81	Chlorothalonil			
	GC 0640 Barley	0.1	CXL-D	
	AS 0640 Barley straw and fodder, Dry	20	CXL-D	
	VD 0071 Beans (dry)	0.2	CXL-D	
	VB 0400 Broccoli	5	CXL-D	
	VB 0402 Brussels sprouts	5	CXL-D	
	VB 0041 Cabbages, Head	1	CXL-D	
	VR 0577 Carrot	1	CXL-D	
	VB 0404 Cauliflower	1	CXL-D	
	VS 0624 Celery	10	CXL-D	
	HH 0624 Celery leaves	3	CXL-D	
	VC 0424 Cucumber	5	CXL-D	
	FB 0021 Currants, Black, Red, White	5	CXL-D	
	FB 0269 Grapes	0.5	CXL-D	
	VC 0046 Melons, except watermelon	2	CXL-D	
	HH 0740 Parsley	3	CXL-D	
	SO 0697 Peanut	0.05	CXL-D	
	VR 0589 Potato	0.2	CXL-D	
	VC 0431 Squash, summer	5	CXL-D	
	VR 0596 Sugar beet	0.2	CXL-D	
	VO 0447 Sweet corn (corn-on-the-cob)	0.01 (*)	CXL-D	
	GC 0654 Wheat	0.1	CXL-D	
	AS 0654 Wheat straw and fodder, Dry	20	CXL-D	
	VC 0433 Winter squash	5	CXL-D	
90	Chlorpyrifos-Methyl			
	MO 0812 Cattle, Edible offal of	0.05	CXL-D	
	MF 0812 Cattle fat	0.05	CXL-D	
	MM 0812 Cattle meat	0.05	CXL-D	
	PO 0840 Chicken, Edible offal of	0.05	CXL-D	
	PF 0840 Chicken fat	0.05	CXL-D	
	PM 0840 Chicken meat	0.05	CXL-D	
136	Procymidone			
	VB 0041 Cabbages, Head	2	CXL-D	
	FS 0013 Cherries	10	CXL-D	

<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
VP 0526 Common bean (pods and/or immature seeds)	1	CXL-D	
VC 0424 Cucumber	2	CXL-D	
VP 0528 Garden pea (young pods) (=succulent, immature seeds)	3	CXL-D	
VP 0529 Garden pea, Shelled (succulent seeds)	1	CXL-D	
VC 0425 Gherkin	2	CXL-D	
FB 0269 Grapes	5	CXL-D	
VL 0482 Lettuce, Head	5	CXL-D	
VA 0385 Onion, Bulb	0.2	CXL-D	
FS 0247 Peach	2	CXL-D	
FP 0230 Pear	1	CXL-D	
VO 0051 Peppers	5	CXL-D	
HS 0444 Peppers Chili, dried	50	CXL-D	
FS 0014 Plums (including prunes)	2	CXL-D	
FB 0272 Raspberries, Red, Black	10	CXL-D	
FB 0275 Strawberry	10	CXL-D	
SO 0702 Sunflower seed	0.2	CXL-D	
OR 0702 Sunflower seed oil, Edible	0.5	CXL-D	
VO 0448 Tomato	5	CXL-D	
159 Vinclozolin			
FB 0264 Blackberries	5	CXL-D	
FB 0020 Blueberries	5	CXL-D	
VB 0041 Cabbages, Head	1	CXL-D	
MM 0812 Cattle meat	0.05 (*)	CXL-D	
ML 0812 Cattle milk	0.05 (*)	CXL-D	
VB 0404 Cauliflower	1	CXL-D	
FS 0013 Cherries	5 Po	CXL-D	
PE 0840 Chicken eggs	0.05 (*)	CXL-D	
PM 0840 Chicken meat	(*)	CXL-D	
VR 0469 Chicory, roots	5	CXL-D	
VP 0526 Common bean (pods and/or immature seeds)	2	CXL-D	
VC 0424 Cucumber	1	CXL-D	
FB 0021 Currants, Black, Red, White	5	CXL-D	
FB 0266 Dewberries (including boysenberry and loganberry)	5	CXL-D	
VP 0529 Garden pea, Shelled (succulent seeds)	1	CXL-D	
VC 0425 Gherkin	1	CXL-D	
FB 0268 Gooseberry	5	CXL-D	
FB 0269 Grapes	5	CXL-D	

<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
DH 1100 Hops, Dry	40	CXL-D	
FI 0341 Kiwifruit	10	CXL-D	
VL 0482 Lettuce, Head	5	CXL-D	
VC 0046 Melons, except watermelon	1	CXL-D	
VA 0385 Onion, Bulb	1	CXL-D	
FS 0247 Peach	5 Po	CXL-D	
HS 0444 Peppers Chili, dried	1	CXL-D	
VO 0445 Peppers, Sweet (including pimento or pimiento)	3	CXL-D	
FP 0009 Pome fruits	1	CXL-D	
VR 0589 Potato	0.1	CXL-D	
SO 0495 Rape seed	1	CXL-D	
FB 0272 Raspberries, Red, Black	5	CXL-D	
FB 0275 Strawberry	10	CXL-D	
VO 0448 Tomato	3	CXL-D	
VS 0469 Witloof chicory (sprouts)	2	CXL-D	
174 Cadusafos			
FI 0327 Banana	0.01 (*)	CXL-D	
VR 0589 Potato	0.02	CXL-D	
178 Bifenthrin			
MF 0812 Cattle fat	0.5	CXL-D	
MO 1280 Cattle kidney	0.05 (*)	CXL-D	
MO 1281 Cattle liver	0.05 (*)	CXL-D	
MM 0812 Cattle meat	0.5 (fat)	CXL-D	
ML 0812 Cattle milk	0.05 (*)	CXL-D	
PO 0840 Chicken, Edible offal of	0.05 (*)	CXL-D	
PE 0840 Chicken eggs	0.01 (*)	CXL-D	
PF 0840 Chicken fat	0.05 (*)	CXL-D	
PM 0840 Chicken meat	0.05 (*) (fat)	CXL-D	
FC 0203 Grapefruit	0.05 (*)	CXL-D	
DH 1100 Hops, Dry	10	CXL-D	
FC 0204 Lemon	0.05 (*)	CXL-D	
GC 0645 Maize	0.05 (*)	CXL-D	
AS 0645 Maize fodder (dry)	0.2	CXL-D	
FC 0208 Orange, Sweet	0.05 (*)	CXL-D	
FP 0230 Pear	0.5	CXL-D	
VR 0589 Potato	0.05 (*)	CXL-D	
GC 0654 Wheat	0.5	CXL-D	
CM 0654 Wheat bran, Unprocessed	2	CXL-D	
CF 1211 Wheat flour	0.2	CXL-D	
AS 0654 Wheat straw and fodder, Dry	0.5	CXL-D	
CF 1212 Wheat wholemeal	0.5	CXL-D	

	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
193	Fenpyroximate			
	FP 0226 Apple	0.3	CXL-D	
	FC 0004 Oranges, Sweet, Sour (including Orange-like hybrids): several cultivars	0.2	CXL-D	
194	Haloxfop			
	FC 0001 Citrus fruits	0.05 (*)	CXL-D	
	FB 0269 Grapes	0.05 (*)	CXL-D	
	FP 0009 Pome fruits	0.05 (*)	CXL-D	
211	Fludioxonil			
	FC 0001 Citrus fruits	7	CXL-D	
217	Novaluron			
	MO 0105 Edible offal (mammalian)	0.7	CXL-D	
	PE 0112 Eggs	0.01 (*)	CXL-D	
	<u>Commodity</u>	<u>MRL (mg/kg)</u>	<u>Step</u>	<u>Note</u>
	MM 0095 Meat (from mammals other than marine mammals)	10 (fat)	CXL-D	
	ML 0106 Milks	0.4	CXL-D	
	FM 0183 Milk fats	7	CXL-D	
	PO 0111 Poultry, Edible offal of	0.01 (*)	CXL-D	
	PM 0110 Poultry meat	0.01 (*) (fat)	CXL-D	
	VO 0448 Tomato	0.02 (*)	CXL-D	
221	Boscalid			
	VL 0053 Leafy vegetables	30	CXL-D	
224	Difenoconazole			
	MO 0105 Edible offal (mammalian)	0.2	CXL-D	
	MM 0095 Meat (from mammals other than marine mammals)	0.05 (fat)	CXL-D	
	ML 0106 Milks	0.005 (*)	CXL-D	
230	Chlorantraniliprole			
	MO 0105 Edible offal (mammalian)	0.01 (*)	CXL-D	
	PE 0112 Eggs	0.01 (*)	CXL-D	
	FB 0269 Grapes	1	CXL-D	
	MM 0095 Meat (from mammals other than marine mammals)	0.01 (*) (fat)	CXL-D	
	ML 0106 Milks	0.01 (*)	CXL-D	
	FM 0183 Milk fats	0.1	CXL-D	
	PO 0111 Poultry, Edible offal of	0.01 (*)	CXL-D	

MRLs for Spices recommended for Revocation

			MRL mg/kg
Codex Number	Commodity	Pesticide	Previous
028B	Fruit or berry	Cypermethrin	0.1

DRAFT REVISION OF THE CODEX CLASSIFICATION OF FOODS AND ANIMAL FEEDS:
"TREE NUTS", "HERBS" AND "SPICES"

(At Step 7)

TREE NUTS

Class A

Type 4 Nuts and seeds Group 022 Group Letter Code TN

Group 022, Tree nuts are the seeds of a variety of trees and shrubs, which are characterized by an inedible shell enclosing an oily seed.

The seed is protected from pesticides applied during the growing season by the shell and other parts of the fruit.

The edible portion of the nut is consumed in natural, dried or processed forms.

Portion of the commodity to which the MRL applies (and which is analysed): **Whole commodity after removal of shell. Chestnuts: whole in skin.**

Group 022 Tree nuts

Code No. Commodity

TN 0085 **Tree nuts**

(includes all commodities in this group)

TN 3100 **African nut**

Ricinodendron heudelotii (Baill.) Heckel

TN 0660 **Almonds**

Prunus dulcis (Mill.) D. A. Webb,

syn: *Amygdalus communis* L., *Prunus amygdalus* Batsch.

TN 3101 **Araucaria nut**

Araucaria bidwillii Hook; *A. angustifolia* (Bertol.) Kuntze;

A. araucana (Molina) K. Koch

TN 0661 **Beech nuts**

Fagus sylvatica L.; *F. grandifolia* Ehrh.

TN 3102 **Betel nut**

Areca catechu L.

TN 0662 **Brazil nut**

Bertholletia excelsa Humb. & Bonpl.

- **Brazilian pine, see Araucaria nut, TN 3101**

Araucaria angustifolia (Bertol.) Kuntze

- **Bunya, see Araucaria nut, TN 3101**

Araucaria bidwillii Hook

- **Bur oak, see Oak nut, TN 3107**

Quercus macrocarpa Michx.

- **Bush nut, see Macadamia nut, TN 0669**

- TN 0663 **Butter nut**
 Juglans cinerea L.
- **Cajou**, see Cashew nut, TN 0295
 Anacardium giganteum Hancock ex Engl.
- TN 3103 **Candle nut**
 Aleurites moluccanus (L.) Willd.
- TN 0295 **Cashew nut**
 Anacardium occidentale L.; *Anacardium giganteum* Hancock ex Engl.
- **Castanha-do-maranhão**, see Pachira nut, TN 0670
 Pachira glabra Pasq.
 syn: *Bombacopsis glabra* (Pasq.) A. Robyns
- TN 0664 **Chestnuts**
 Castanea spp.
- **Chinquapin**, see Chestnuts, TN 0664
 Castanea pumila (L.) Mill.
- TN 0665 **Coconut**
 Cocos nucifera L.
- TN 3104 **Dika nut**
 Iringia gabonensis (Aubry-Lecomte ex O'Rorke) Baill.
- **Filberts**, see Hazelnuts, TN 0666
 Corylus maxima Mill.
- TN 3105 **Ginkgo**
 Ginkgo biloba L.
- **Guiana chestnut**, see Pachira nut, TN 0670
 Pachira aquatica Aubl.
- **Heartnut**, see Walnuts, TN 0678
 Juglans ailantifolia var. *cordiformis* (Makino) Rehder
- TN 0666 **Hazelnuts**
 Corylus avellana L.; *C. maxima* Mill.;
 C. americana Marschall; *C. californica* (A. DC.) Rose
- TN 0667 **Hickory nuts**
 Carya ovata (Mill.) K. Koch.; *C. glabra* (Mill.) Sweet;
 other sweet *Carya* species
- TN 0668 **Japanese horse-chestnut**
 Aesculus turbinata Blume;
- **Java almonds**, see Pili nuts, TN 0673
 Canarium vulgare Leenh.; *C. indicum* L.

- TN 0669 **Macadamia nuts**
 Macadamia ternifolia F. Muell.; *M. tetraphylla* L.A.S. Johnson;
 M.intregifolia Maiden & Betche
- TN 3106 **Mongongo**
 Schinziophyton rautanenii Schinz) Radcl.-Sm
- **Monkey-pot**, see Sapucaia nut, TN 0676
 Lecythis pisonis Cambess.
- **Monkey-puzzle**, see Araucaria nut, TN 3101
 Araucaria araucana (Molina) K. Koch
- TN 3107 **Oak nut**
 Quercus spp.
- TN 3108 **Okari nut**
 Terminalia kaernbachii Warb.
- TN 0670 **Pachira nut**
 Pachira insignis Savigny; *Pachira glabra* Pasq.; *Pachira aquatica* Aubl.
- TN 0671 **Paradise nut**, see Sapucaia nut
 Lecythis zabucajo Aubl.
- TN 0672 **Pecan**
 Carya illinoensis (Wangenh.) K. Koch
- TN 3109 **Pequi seed**
 Caryocar brasiliense Cambess.
- **Pignolia or Pignoli**, see Pine nuts, TN 0673
- TN 0674 **Pili nuts**
 Canarium ovatum Engl.; *C. luzonicum* A Gray; *C. vulgare* Leenh.;
 C indicum L.
- TN 0673 **Pine nuts**
 Mainly *Pinus pinea* L.; also
 P. cembra L.; *P. edulis* Engelm.; *P.sibirica* Du Tour; *P. Koraiensis* Siebold & Zucc.; *P. Gerardiana*
 Wall. Ex D. Don; *P. Monophylla* Torr & Frém.
 and other *Pinus* species, except *P. armandii* Franch. and *P. massoniana* Lamb.
- **Pinocchi**, see Pine nuts, TN 0673
- **Piñon nut**, see Pine nuts, TN 0673
- TN 0675 **Pistachio nut**
 Pistachio vera L.
- **Queensland nut**, see Macadamia nut, TN 0669
- TN 0676 **Sapucaia nut**
 Lecythis zabucajo Aubl.; *L. minor* Jacq.; *L. ollaria* Loefl.; *L. pisonis* Cambess

TN 0677	Tropical almond <i>Terminalia catappa</i> L.
TN 0678	Walnuts <i>Juglans regia</i> L.; <i>J. nigra</i> L. <i>J. hindsii</i> Jeps. Ex R.E. Sm.; <i>J. microcarpa</i> Berland var. <i>microcarpa</i> ; <i>Juglans ailantifolia</i> var. <i>cordiformis</i> (Makino) Rehder
-	Walnut, Black , see Walnuts, TN 0789 <i>Juglans nigra</i> L.; <i>J. hindsii</i> Jeps. Ex R.E. Sm.; <i>J. microcarpa</i> Berland var. <i>microcarpa</i>
-	Walnut, English; Walnut, Persian , see Walnuts, TN 0678 <i>Juglans regia</i> L.
TN 3110	Yellow-horn <i>Xanthoceras sorbifolium</i> Bunge

HERBS**Class A**

Type 5 **Herbs and spices** **Group 027** **Group Letter Code HH**

Herbs consist of leaves, flowers, stems and roots from a variety of (herbaceous) plants, used in relatively small amounts as condiments to flavour foods or beverages. They are used either in fresh or naturally dried form.

Herbs are fully exposed to pesticides applied during the growing season. Post-harvest treatments are often carried out on dried herbs.

Herbs are consumed as components of other foods in succulent and dried forms or as extracts of the succulent products.

The group Herbs is divided in two subgroups:

027A Herbs (herbaceous plants)

027B Leaves of woody plants (leaves of shrubs and trees)

Portion of the commodity to which the MRL applies (and which is analysed): **Whole commodity as marketed, mainly in the fresh form.**

Group 027 **Herbs**

Code No. **Commodity**

HH 0092 **Herbs**

(includes all commodities in this group)

Group 027A Herbs (herbaceous plants)

Code No. **Commodity**

HH 2095 **Herbs (herbaceous plants)**

(includes all commodities in this subgroup)

HH 0720 **Angelica**

Angelica archangelica L.; *A. sylvestris* L.

HH 3190 **Anise**

Pimpinella anisum L.

HH 0721 **Balm leaves**

Melissa officinalis L.

HH 0722	Basil <i>Ocimum basilicum</i> L. <i>Ocimum x citrodorum</i> Vis.; <i>O. minimum</i> L.; <i>O. americanum</i> L.; <i>O. gratissimum</i> L.; <i>O. tenuiflorum</i> L.
HH 0724	Borage <i>Borago officinalis</i> L.
HH 3191	Borage, Indian <i>Plectranthus amboinicus</i> (Lour.) Spreng.
HH 0725	Burnet <i>Sanguisorba officinalis</i> L.; <i>Sanguisorba minor</i> Scop.
HH 3192	Calamint <i>Calamintha grandiflora</i> (L.) Moench; <i>Calamintha nepeta</i> (L.) Savi
HH 0737	Calendula, leaves [and flowers] <i>Calendula officinalis</i> L.
HH 3193	Caraway leaves <i>Carum carvi</i> L.
HH 0726	Catmint <i>Nepeta cataria</i> L.
-	Catnip , see Catmint, HH 0726
HH 0624	Celery leaves <i>Apium graveolens</i> L.; var. <i>seccalinum</i> (Alef) Mansf.
-	Chervil, leaves and flowers , VL 0465, see Group 013: Leafy vegetables
HH 0727	Chives , VA 2605, see Group 009: Bulb vegetables
-	Cilantro , see Coriander leaves HH 3194
-	Clary , see Sage (and related <i>Salvia</i> species), HH 0743 <i>Salvia sclarea</i> L.
HH 3194	Coriander leaves <i>Coriandrum sativum</i> L.
HH 3195	Coriander, Bolivian <i>Porophyllum ruderale</i> (Jacq.) Cass.
HH 3196	Coriander, Vietnamese <i>Persicaria odorata</i> (Lour.) Sojak.
HH 0748	Costmary <i>Tanacetum balsamita</i> L.;
HH 3197	Cover fern <i>Marsilea crenata</i> C. Presl.
HH 3198	Culantro <i>Eryngium foetidum</i> L.

- HH 3199 **Curry plant**
Helichrysum italicum (Roth.) G. Don
- **Daylily**, see Group 009: Bulb vegetables, VA 2600
- **Daylily flowers**, see Edible flowers, HH 3200
- HH 0730 **Dill**
Anethum graveolens L.
- HH 3201 **Epazote**
Dysphania ambrosioides (L.) Mosyakin & Clemants
- **Estragon**, see Tarragon, HH 0749
- **Fennel, Bulb**, see Group 017: Stalk and Stem vegetables, VA 0380
- HH 0731 **Fennel leaves**
Foeniculum vulgare Mill.;
- HH 3202 **Fennel, Spanish**
Nigella hispanica L. and *Nigella damascena* L.
- HH 3203 **Fenugreek leaves**
Trigonella foenum-graecum L.
- HH 3204 Geranium (lemon, rose)**
Pelargonium crispum (P.J. Bergius) L'Her and *Pelargonium graveolens* L'Her; *Pelargonium tomentosum* Jacq.; *Pelargonium quercifolium* (L.f.) L'Hér. ex Aiton and other scented varieties]
- HH 0732 **Horehound**
Marrubium vulgare L.
- HH 0733 **Hyssop**
Hyssopus officinalis L.
- HH 3205 **Hyssop, anise**
Agastache foeniculum (Pursh) Kuntze; *Agastache rugosa* (Fisch. & C.A. Mey) Kuntze
- HH 0734 **Lavender**
Lavandula angustifolia Mill.;
- HH 3206 **Lemongrass**
Cymbopogon citratus (DC.) Stapf; *C. flexuosus* (Nees ex Steud.) Will. Watson
- HH 0735 **Lovage, leaves**
Levisticum officinale Koch.
- HH 3207 **Marigold**
Tagetes erecta L.; *T. patula* L.; *T. lucida* Cav.; *T. tenuifolia* Cav.
- HH 0736 **Marjoram**
Origanum marjorana L.; *O. vulgare* L. *O. onites* L.
- HH 3208 **Meadowsweet**
Filipendula ulmaria (L.) Maxim.

- HH 0738 **Mints**
 Several *Mentha* species and hybrids; (see also individual Mints)
 including *Mentha spicata* L., syn: *M. cordifolia* Opiz ex Fresen.;
 M. x piperata L.; *Mentha x gracilis* Sole; *M. aquatica* L.; *M. longifolia* (L.) Huds.; *M. arvensis* L.; *M. suaveolens* Ehrh.
- HH 3209 **Mioga** (shoots and flower buds)
 Zingiber mioga (Thunb.) Roscoe
- HH 3210 **Monarda**
 Monarda didyma L.; *M. fistulosa* L.; *M. punctata* L.; *M. citriodora* Cerv. Ex Lag.; *M. pectinata* Nutt.
- **Mugwort**, see see Southernwood, HH 0754
 Artemisia vulgaris L.
- **Myrrh**, see Sweet Cicely, HH 0747
- HH 0739 **Nasturtium, leaves**
 Tropaeolum majus L.; *T. minus* L.
- HH 3211 **Nettle**
 Urtica dioica L.
- **Oregano**, see Marjoram, HH 0736
 Origanum vulgare L.; *O. onitum* L.
- HH 3212 **Oregano, Mexican**
 Lippia graveolens Kunth; *L. micromera* Schauer
- HH 3213 **Pandan leaves**
 Pandanus amaryllifolius Roxb.
- HH 0740 **Parsley**
 Petroselinum crispum (Mill.) Nyman ex A. W. Hill;
 syn: *P. sativum* Hoffm.; *P. hortense* auct.
 P. crispum var. *neapolitanum* Danert
- HH 3214 **Pennywort**
 Centella asiatica (L.) Urb.
- **Peppermint**, see Mints, HH 0738
 Mentha x piperita L.
- HH 3215 **Perilla**
 Perrilla frutescens (L.) Britton var. *crispa*
- **Phak ka yaeng**, see Rice paddy herb, HH 3217
- HH 3216 **Phak paew**
 Trichodesma indicum (L.) Sm.
- HH 3217 **Rice paddy herb**
 Limnophila chinensis (Osbeck) Merr.
 syn: *Limnophila aromatica* (Lam.) Merr.

- HH 0741 **Rosemary**
Rosmarinus officinalis L.
- HH 0743 **Sage and related *Salvia* species**
Salvia officinalis L.; *S. sclarea* L.; *S. triloba* L.
- HH 0745 **Savory, Summer; Winter**
Satureja hortensis L.; *S. montana* L.
- HH 0746 **Sorrel, Common, and related *Rumex* species**
among others *Rumex acetosa* L.; *R. scutatus* L.; *R. patientia* L.
- HH 0754 **Southernwood**
Artemisia abrotanum L.; *A. pontica* L.
- **Spearmint, see Mints, HH 0738**
Mentha spicata L.;
- HH 3218 **Stevia**
Stevia rebaudiana (Bertoni) Bertoni
- **Stink weed or Stinking, see Culantro, HH 3198**
Eryngium foetidum L.
- **Swamp leaf, see Rice paddy herb, HH 3217**
- HH 0747 **Sweet Cicely**
Myrrhis odorata (L.) Scop.
- HH 0749 **Tarragon**
Artemisia dracunculus L.; *A. drancunculoides* Pursh.
- HH 0750 **Thyme**
Thymus vulgaris L.; *T. serpyllum* L.;
T. citriodorus (Pers.) Schreb. and *Thymus* hybrids.
- **Vietnamese mint, see Coriander, Vietnamese, HH 3196**
Polygonum odoratum Lour.
- HH 3219 **Violet**
Viola odorata L.; *V. tricolor* L.
- HH 3220 **Wasabi leaves**
Wasabia japonica (Miq.) Matsum.
- **Watercress, see Group 013: Leafy vegetables, VL 0473**
- HH 3221 **Waterpepper, Japanese**
Persicaria hydropiper (L.) Delabre
- HH 3322 **Wild betle leaf bush**
Piper sarmentosum Roxb.
- HH 0751 **Winter cress, Common; American**
Barbarea vulgaris W.T. Aiton.; *B. verna* (Mill.) Asch.

HH 0752	Wintergreen leaves <i>Gaultheria procumbens</i> L. (not including herbs of the Wintergreen family (<i>Pyrolaceae</i>))
HH 3223	Yarrow <i>Achillea millefolium</i> L.
HH 3224	Yomogi <i>Artemisia indica</i> Willd. var. <i>maximowizii</i> (Nakai) H. Hara

Group 027B Leaves of woody plants

<u>Code No.</u>	<u>Commodity</u>
HH 2096	Leaves of woody plants (includes all commodities in this subgroup)
HH 3230	Aniseed myrtle <i>Syzygium anisatum</i> (Vickery) Craven & Biffen
-	Bay leaves , see Laurel leaves HH 0723
HH 3231	Boldo <i>Peumus boldus</i> Molina
HH 0729	Curry leaves <i>Bergera koenigii</i> L. syn: <i>Murraya koenigii</i> L. Sprengel
HH 3232	Japanese pepper leaves <i>Zanthoxylum piperitum</i> (L.) DC.
HH 3233	Kaffir lime leaves <i>Citrus hystrix</i> DC.
HH 0723	Laurel leaves <i>Laurus nobilis</i> L.
HH 3234	Lemon myrtle <i>Backhousia citriodora</i> F. Muell.
-	Malabar leaf , see Tejpat leaves, HH 3237
-	Malabathrum , see Tejpat leaves, HH 3237
HH 3235	Native mint <i>Prostanthera incise</i> R. Br, <i>P. rotundifolia</i> R. Br.
[HH XXXX	Pepper, leaves <i>Piper spp.</i>
HH 3236	Pepperbush, leaves <i>Tasmiana lanceolata</i> (Poir.) A.C. Sm.; <i>T. stipitata</i> (Vick.)
HH 0742	Rue <i>Ruta graveolens</i> L.

HH 0744 **Sassafras leaves**
 Sassafras albidum (Nutt.) Nees

HH 3237 **Tejpat leaves**
 Cinnamomum tamala (Buch.-Ham) Nees & Eberm.

SPICES

Class A

Type 5 Herbs and spices Group 028 Group Letter Code HS

Group 028. Spices consist of the aromatic seeds, buds, roots, rhizomes, bark, pods, flowers or parts thereof, berries or other fruits from a variety of plants, which are used in relatively small quantities to flavour foods.

Spices are exposed in varying degrees to pesticides applied during the growing season. Also post harvest treatment may be applied to spices in the dried form.

They are consumed primarily in the dried form as condiments.

The group Spices is divided in eight subgroups:

- 028A Spices, seeds
- 028B Spices, fruit or berry
- 028C Spices, bark
- 028D Spices, root or rhizome
- 028E Spices, buds
- 028F Flower or stigma
- 028G Spices, aril
- 028H Spices, Citrus peel

Portion of the commodity to which MRL applies (and which is analysed): Unless specified, whole commodity as marketed, mainly in the dried form.

Group 028 Spices

<u>Code No.</u>	<u>Commodity</u>
HS 0093	Spices (includes all commodities in this group)

Group 028A Seeds

<u>Code No.</u>	<u>Commodity</u>
HS 0190	Spices, seeds (includes all commodities in this subgroup)
HS 3280	Achiote seeds <i>Bixa orellana</i> L.
HS 3281	Ajwain <i>Trachyspermum ammi</i> (L.) Sprague ex Turill syn: <i>T. copticum</i> L.
HS 0720	Angelica seed <i>Angelica archangelica</i> L.; <i>A. sylvestris</i> L.
-	Aniseed , see Anise seed, HS 0771
HS 0771	Anise seed <i>Pimpinella anisum</i> L.

HS 0722	Basil seed <i>Ocimum</i> spp.
HS 3282	Black caraway <i>Nigella sativa</i> L.
HS 0774	Caraway seed <i>Carum carvi</i> L.
HS 0624	Celery seed <i>Apium graveolens</i> L.
HS 3283	Chia <i>Salvia hispanica</i> L.
HS 0779	Coriander, seed <i>Coriandrum sativum</i> L.
HS 3284	Culantro seed <i>Eryngium foetidum</i> L.
HS 0780	Cumin seed <i>Cuminum cyminum</i> L.
HS 0730	Dill seed <i>Anethum graveolens</i> L.
HS 0731	Fennel, seed <i>Foeniculum vulgare</i> Mill.; syn: <i>F. officinale</i> All; <i>F. capilaceum</i> Gilib.
HS 0782	Fenugreek, seed <i>Trigonella foenum-graecum</i> L.; <i>T. caerulea</i> (L.) Ser.
HS 3285	Honewort seed <i>Cryptotaenia japonica</i> Hassk.
HS 0735	Lovage, seed <i>Levisticum officinale</i> Koch.
HS 3286	Mahaleb <i>Prunus mahaleb</i> L.
HS 0789	Nutmeg Seed of <i>Myristica fragrans</i> Houtt.
HS 0740	Parsley seed <i>Petroselinum crispum</i> (Mill.) Nyman ex A. W. Hill;
-	Poppy seed, SO 0495, see Group 023: Oilseed
-	Sesame seed, SO 01700, see Group 023: Oilseed
HS 3287	Wattle seed <i>Acacia victoriae</i> Bent. and other spp.

Group 028B Fruit or berry

<u>Code No.</u>	<u>Commodity</u>
HS 0191	Spices, fruit or berries (includes all commodities in this subgroup)
-	Allspice fruit , see Pimento, HS 0792
HS 3290	Caper berries <i>Capparis spinosa</i> L.
HS 0775	Cardamom (pods and seeds) <i>Elettaria cardamomum</i> (L.) Maton <i>Amomum tsao-ko</i> Crevost & Lemarié; <i>A. subulatum</i> Roxb.; <i>A. compactum</i> Sol.ex Maton
-	Cardamom, black , see Cardamom, HS 0775
HS 3291	Cumin, black <i>Bunium persicum</i> (Boiss.) B. Fedtsch.
HS 3292	Eucalyptus fruit <i>Eucalyptus</i> spp.
HS 3293	Gardenia fruit <i>Gardenia jasminoides</i> J.Ellis
HS 0785	Grains of paradise <i>Aframomum melegueta</i> (Rosc.) K Schum.; syn: <i>Amomum melegueta</i> Rosc.
HS 3294	Grains of Selim <i>Xylopia aethiopica</i> (Dunal) A. Rich.
HS 0786	Juniper, berry <i>Juniperis communis</i> L.
HS 3295	Luo han guo <i>Siraitia grosvenorii</i> (Swingle) C. Jeffrey ex. A.M. Lu & Zhi Y. Zhang
HS 3296	Miracle fruit <i>Synsepalum dulciferum</i> (Scumach. & Thonn.) Daniell
HS 0739	Nasturtium pods <i>Tropaeolum majus</i> L.; <i>T. Minus</i> L.
HS 0790	Pepper, Black; White; Pink; Green (see Note 1) <i>Piper nigrum</i> L.
HS 3297	Pepper, Cubeb <i>Piper cuceba</i> L. f.
HS 0791	Pepper, Long <i>Piper longum</i> L.; <i>P. retrofractum</i> Vahl.;

HS 3298	Pepper, Sichuan <i>Zanthoxylum bungeanum</i> Maxim.; <i>Z. schinifolium</i> Siebold & Zucc.; <i>Z. simulans</i> Hance; <i>Z. piperitum</i> (L.) DC
HS 3299	Peperbush berry <i>Tasmannia lanceolata</i> (Poir.) A.C. Sm.; <i>T. stipitata</i> (Vick.) A.C. Smith
HS 3300	Peppertree <i>Schinus terebinthifolius</i> Raddi; <i>S. molle</i> L.
HS 0792	Pimento, fruit <i>Pimenta dioica</i> (L.) Merrill
HS 3301	Star anise <i>Illicium verum</i> Hook.f.
HS 0369	Tamarind , see also Group 006: Assorted tropical and sub-tropical fruits - inedible peel <i>Tamarindus indica</i> L., sour varieties
HS 0795	Vanilla, beans <i>Vanilla planifolia</i> Andrews

Group 028C Bark

<u>Code No.</u>	<u>Commodity</u>
HS 0192	Spices, bark (includes all commodities in this subgroup)
-	Cassia bark , see Cinnamon bark (including Cinnamon, Chinese bark), HS 0777 <i>Cinnamomum aromaticum</i> Nees;
HS 0777	Cinnamon bark (including Cinnamon, Chinese bark) <i>Cinnamomum verum</i> J. Presl., syn: <i>Cinnamomum zeylanicum</i> Blume; <i>C. aromaticum</i> Nees; <i>C. burmannii</i> (Nees & T. Nees) Blume; <i>C. loureiroi</i> Nees;
HS 3310	Eucalyptus bark <i>Eucalyptus</i> spp.
HS 3311	Mastic <i>Pistacia lentiscus</i> L.
-	Quinine , see Red cinchona, HS 3312
HS 3312	Red cinchona <i>Cinchona pubescens</i> Vahlk; <i>C. officinalis</i> L.

Group 028D Root or rhizome

<u>Code No.</u>	<u>Commodity</u>
HS 0193	Spices, root or rhizome (includes all commodities in this subgroup)
-	Angelica, root, stem and leaves , see Group 027: Herbs, Angelica HH 0720
HS 3320	Asafoetida (see Note 2) <i>Ferula foetida</i> (Bunge) Regel; <i>F. assa-foetida</i> L.

HS 3321	Coriander, root <i>Coriandrum sativum</i> L.
HS 3322	Fingerroot <i>Boesenbergia rotunda</i> (L.) Mansf. syn: <i>B. pandurata</i> (Roxb.) Schltr.
HS 0783	Galangal, rhizomes <i>Languas galanga</i> (L.) Stunz; syn: <i>Alpinia galanga</i> Sw.; <i>Languas officinarum</i> (Hance) Farwell; syn: <i>Alpinia officinarum</i> Hance <i>Kaempferia galanga</i> L.
HS 0784	Ginger, rhizomes <i>Zingiber officinale</i> Rosc.
-	Horseradish , see VR 0583, Group 016: Root and Tuber vegetables
-	Krachai , see Fingerroot, HS 3322
-	Licorice , see Liquorice, roots, HS 0787
HS 0787	Liquorice, roots <i>Glycyrrhiza glabra</i> L.
HS 3323	Lovage, roots <i>Levisticum officinale</i> Koch.
HS 0794	Turmeric, root <i>Curcuma longa</i> L.; <i>C. mangga</i> Valeton & van Zijp
HS 3324	Zedoary <i>Curcuma zedoaria</i> (Cristm.) Roscoe
Group 028E Buds	
<u>Code No.</u>	<u>Commodity</u>
HS 0194	Spices, buds (includes all commodities in this subgroup)
HS 0773	Caper buds <i>Capparis spinosa</i> L.
HS 0776	Cassia buds <i>Cinnamomum aromaticum</i> (L.) Nees
HS 0778	Cloves, buds <i>Syzygium aromaticum</i> (L.) Merr. & Perr.; syn: <i>Eugenia caryophyllus</i> (Sprengel) Bullock & Harrison; <i>E. aromatica</i> Kuntze; <i>E. caryophyllata</i> Thunb.; <i>Caryophyllus aromaticus</i> L.

Group 028F Flower or stigma

<u>Code No.</u>	<u>Commodity</u>
HS 0195	Spices, flower or stigma (includes all commodities in this subgroup)

HS 3340 **Saffron**
 Crocus sativus L.

Group 028G Aril

<u>Code No.</u>	<u>Commodity</u>
HS 0196	Spices, aril (includes all commodities in this subgroup)
HS 0788	Mace Dried aril of <i>Myristica fragrans</i> Houtt.

Group 028H Citrus Peel

<u>Code No.</u>	<u>Commodity</u>
HS 0197	Spices, Citrus peel (includes all commodities in this subgroup)
HS 2206	Kaffir lime peel <i>Citrus hystrix</i> DC.
HS 3350	Satsuma mandarin peel <i>Citrus unshiu</i> Marcow.
HS 2211	Yuja peel <i>Citrus junos</i> Siebold ex Tanaka Yuzu peel , see Yuja peel, HS 2211

Note 1: Although white pepper is in principle a processed food belonging to Type 13: Derived products of plant origin, it is listed for convenience in Group 028 Spices. White pepper is prepared from Black pepper, *Piper nigrum* L.: The seeds are retted in water and dried after removal of the mesocarp. The resulting white pepper may or may not be ground into powder. The scientific name of green pepper and pink pepper is *Piper nigrum* L. Pink pepper is mature pepper. Green pepper is an immature stage of pink pepper.

Note 2: Asafoetida is not only marketed as root, but also as products (resin, powder, flour), which are produced from a gum of the root.

APPENDIX VII

DRAFT REVISION OF THE CODEX CLASSIFICATION OF FOODS AND ANIMAL FEEDS: "HERBS"

(At Step 6)

Group 027 Herbs

Group 027A Herbs (herbaceous plants)

Code No. Commodity

[HH 3200 Edible flowers]

Calendula flowers, *Calendula officinalis* L.; Geranium (lemon, rose), *Pelargonium crispum* (P.J. Bergius) L'Her and *Pelargonium graveolens* L'Her; Common daisy, *Bellis perennis* L. and other edible flowers]

APPENDIX VIII

PROPOSED DRAFT REVISION OF THE CODEX CLASSIFICATION OF FOODS AND ANIMAL FEEDS: "ASSORTED TROPICAL AND SUB-TROPICAL FRUITS EDIBLE PEEL" AND "ASSORTED TROPICAL AND SUB-TROPICAL FRUITS-INEDIBLE PEEL"

(At Step 5)

ASSORTED TROPICAL AND SUB-TROPICAL FRUITS - EDIBLE PEEL

Class A

Type 1	Fruits	Group 005	Group Letter Code FT
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The Assorted tropical and sub-tropical fruits - edible peel are derived from the immature or mature fruits of a large variety of perennial plants, usually shrubs or trees. The fruits are fully exposed to pesticides during the growing season (period of fruit development).

The whole fruit may be consumed in a succulent or processed form.

The group 005 Miscellaneous fruits – edible peel is divided in 3 subgroups:

005 A Assorted tropical and sub-tropical fruits - edible peel – small

005 B Assorted tropical and sub-tropical fruits - edible peel – medium to large

005 C Assorted tropical and sub-tropical fruits - edible peel – palms

Portion of the commodity to which the MRL applies (and which is analysed): Whole commodity. Dates and Olives: Whole commodity after removal of stems and stones but residue calculated and expressed on the whole fruit.

Group 005 Assorted tropical and sub-tropical fruits - edible peel

<u>Code No.</u>	<u>Commodity</u>
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FT 0026	Assorted tropical and sub-tropical fruits - edible peel
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Group 005A Assorted tropical and sub-tropical fruits - edible peel – small

<u>Code No.</u>	<u>Commodity</u>
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FT 2011	Assorted tropical and sub-tropical fruits - edible peel – small
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(includes all commodities in this subgroup)

-	Acerola, see Barbados cherry, FT 0287
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FT 2300	African plum
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Vitex doniana Sweet

FT 2301	Almondette
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Buchanania lanzan Spreng.

FT 2302	Apple berry
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Billardiera scandens Sm.

FT 0286	Arbutus berry
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Arbutus unedo L.

FT 0287	Barbados cherry
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Malpighia emarginata DC.; syn: *M. glabra* L.

FT 2303	Bayberry, Red
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Morella rubra Lour

FT 2304	Bignay
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Antidesma bunius (L.) Spreng.

- FT 2305 **Breadnut**
 Bosimum alicastrum Sw.
- **Brazilian cherry**, see Grumichana, FT 0298
- FT 2306 **Cabeluda**
 Plinia glomerata (O. Berg) Amshoff
- **Camu-camu**, see Rumbery, FT 2328
- **Caranda**, see Karanda FT 0290
- FT 2307 **Carandas plum**
 Carissa edulis Vahl.
- FT 2308 **Ceylon iron wood**
 Manilkara hexandra (Roxb.) Dubard
- FT 2309 **Ceylon olive**
 Elaeocarpus serratus L.
- FT 2310 **Cherry-of-the-Rio-Grande**
 Eugenia aggregate (Vell.) Kiaersk.
- FT 0293 **Chinese olive, Black, White**
 Canarium tramdenum C.D.Dai&Yakovlev; Syn: *C pimela* Koenig
 Canarium album (Lour.) Raeusch.
- FT 2311 **Chiraulinut**
 Buchanania latifolia Roxb.
- FT 0294 **Coco plum**
 Chrysobalanus icaco L.
- FT 0296 **Desert date**
 Balanites aegyptiacus (L.)Delile
- FT 2312 **False sandalwood**
 Ximenia americana L.
- FT 2313 **Fragrant manjack**
 Cordia dichotoma G. Forst.
- FT 2314 **Gooseberry, Abyssinian**
 Dovyalis abyssinica (A. Rich.) Warb.
- FT 2315 **Gooseberry, Ceylon**
 Dovyalis hebecarpa (Gardner) Warb.
- FT 2316 **Governor's plum**
 Flacourtia indica (Burm.fF) Merr.;
 Flacourtia inermis Roxb.;
 Flacourtia rukam Zoll.&Moritzi;
 Flacourtia jangomas (Lour.)Raeusch.

-	Kumquat, Marumi , see Kumquats, FT 0303
	<i>Fortunella japonica</i> (Thunberg) Swingle
-	Kumquat, Nagami , see Kumquats, FT 0303
	<i>Fortunella margarita</i> (Loureiro) Swingle
FT 2324	Lemon aspen
	<i>Acronychia acidula</i> F. Muell.
[FT 2325	Limequats
	<i>Citrus japonica</i> x <i>Citrus aurantiifolia</i>
-	Maya breadfruit , See Breadnut
FT 2326	Monos plum
	<i>Pseudanmomis umbellulifera</i> (Kunth) Kausel
FT 2327	Mountain cherry
	<i>Bunchosia cornifolia</i> Kunth
FT 0306	Otaheite gooseberry
	<i>Phyllanthus acidus</i> (L.) Skeels
	syn: <i>Ph. distichus</i> (L.) Muell.-Arg.
-	Olives for oil production , see Group 023 Oilseed
FT 2328	Persimmon, Black
	<i>Diospyros texana</i> Scheele
FT 2329	Pitomba
	<i>Eugenia luschnathiana</i> Klotzsch ex O. Berg
-	Plum-of-Martinique , See Governor's plum, FT 2316
-	Rukam , See Governor's plum, FT 2316
FT 2330	Rumberry
	<i>Myrciaria dubia</i> (Kunth) Mc Vaugh
FT 0310	Sea grape
	<i>Coccoloba uvifera</i> Jacq.
FT 2331	Sete-capotes
	<i>Campomanesia guazimifolia</i> (Cambess.) O. Berg
FT 2332	Silver aspen
	<i>Acronychia wilcoxiana</i> (F. Muell.) T.G. Hartley
FT 0305	Table Olives
	<i>Olea europaea</i> L., var. <i>europaea</i>
-	Tree strawberry , see Arbutus berry, FT 0286
FT 2333	Water apple
	<i>Syzygium aqueum</i> (Burm. F.) Alston

FT 2334	Water berry <i>Syzygium cordatum</i> Hochst. Ex C. Krauss
FT 2335	Water pear <i>Syzygium guineense</i> (Willd.) DC
-	Yumberry , See Bayberry, Red, FT 2303
Group 005B Assorted tropical and sub-tropical fruits - edible peel – medium to large	
<u>Code No.</u>	<u>Commodity</u>
FT 2012	Assorted tropical and sub-tropical fruits - edible peel – large (includes all commodities in this subgroup)
FT 0285	Ambarella <i>Spondias dulcis</i> Sol. Ex Parkinson; syn: <i>S. cytherea</i> Sonn.
-	Aonla , See Gooseberry, Indian, FT 2356
FT 2350	Arazá <i>Eugenia stipitata</i> Mac Vaugh
FT 2351	Babaco <i>Vasconcella x heilbornii</i> (V.M. Badillo) V.M. Badillo
FT 0288	Bilimbi <i>Averrhoa bilimbi</i> L.
FT 2352	Cajou (pseudofruit) <i>Anacardium giganteum</i> Hance ex Engl.
FT 2353	Cambucá <i>Martiera edulis</i> Nied.
FT 0289	Carambola <i>Averrhoa carambola</i> L.
FT 0291	Carob <i>Ceratonia siliqua</i> L.
FT 0292	Cashew apple <i>Anacardium occidentale</i> L.
FT 2354	Ciruela verde <i>Bunchosia armeniaca</i> (Cav.) DC.
FT 2355	Davidson plum <i>Davidsonia pruriens</i> F. Muell
FT 0297	Fig <i>Ficus carica</i> L.
FT 2356	Gooseberry, Indian <i>Phyllanthus emblica</i> L.

FT 0336	Guava <i>Psidium guajava</i> L.
FT 2357	Guava, Brazilian <i>Psidium guineense</i> Sw.
FT 2358	Guava, Cattley <i>Psidium cattleianum</i> Sabine
FT 2359	Guava, Costa Rican <i>Psidium friedrichsthalianum</i> (O. Berg) Nied.
FT 2360	Guava, Para <i>Psidium acutangulum</i> DC.
FT 2361	Guayabillo <i>Psidium sartorianum</i> (O. Berg) Nied.
FT 2362	Imbé <i>Garcinia livingstonei</i> T. Anderson
FT 2363	Imbu <i>Spondias tuberosa</i> Arruda ex Kost.
-	Indian mulberry , See Noni, FT 2371
FT 0300	Jaboticaba <i>Myrciaria cauliflora</i> O. Berg.; syn: <i>Eugenia cauliflora</i> DC.
FT 0301	Jujube, Indian <i>Ziziphus mauritania</i> Lam.; syn: <i>Z. jujuba</i> (L.) Lam. Gaertn.
-	Kaki or Kaki fruit , See Persimmon, japanese, FT 0307
FT 2364	Kwai muk <i>Artocarpus hypargyreus</i> Hance ex Benth.
-	Locust tree , See carob, FT 0291
FT 2365	Mangaba <i>Hancornia speciosa</i> Gomes
FT 2366	Marian plum <i>Bouea macrophylla</i> Griff
FT 2367	Mombin, Malayan <i>Spondias pinnata</i> (J. Koenig. ex L. f.) Kurz
FT 2368	Mombin, Purple <i>Spondias purpurea</i> L.

- FT 2369 **Monkey fruit**
 Autocarpus lacucha Buch.-Ham.
- **Muriti**, See Nance, FT 2370
- FT 2370 **Nance**
 Byrsonima crassifolia (L.) Kunth
- FT 0304 **Natal plum**
 Carissa macrocarpa (Eckl.) A.DC.
 Syn: *C. grandiflora* (E, Mey) A.DC.
- FT 2371 **Noni**
 Morinda citrifolia L.
- FT 2372 **Papaya, Mountain**
 Vasconcellea pubescens A. DC.
- [- **Persimmon Chinese**, see Persimmon, Japanese, FT 0307
- FT 0307 **Persimmon, Japanese**
 Diospyros Kaki Thunb.;
 syn: *D. chinensis* Blume]
- **Pitanga**, see Surinam Cherry, FT 0311
- FT 0308 **Pomerac**
 Syzygium Malaccense (L.) Merr. et Perry;
 syn: *Eugenia malaccensis* L.
- **Pomarroza**, see Rose apple, FT 0309
- **Pomarroza, Malay**, see Pomerac, FT 0308
- **Purple strawberry guava**, See Guava, Cattley, FT 2357
- FT 2373 **Rambai**
 Baccaurea motleyana (Müll. Arg.) Müll. Arg
- FT 0309 **Rose apple**
 Syzygium jambos (L.) Alston;
 syn: *Eugenia jambos* L.
- FT 0364 **Sentul**
 Sandoricum koetjape (Burm.F) Merr.
- **Strawberry guava**, See Gauva, Cattley, FT 2357
- **St. John's bread**, see Carob, FT 0291
- FT 0311 **Surinam cherry**
 Eugenia uniflora L.
- [FT 0369 **Tamarind**, see also Subgroup 28B Spices: Fruit or berry
 Tamarindus indica L., sweet varieties]
- **Umbu**, See Imbu FT 2362

FT 2374	Uvalha <i>Eugenia pyriformis</i> Cambess
-	Yellow strawberry guava , See Guava, Cattley, FT 2357
Group 005C	Assorted tropical and sub-tropical fruits - edible peel – palms
<u>Code No.</u>	<u>Commodity</u>
FT 2013	Assorted tropical and sub-tropical fruits - edible peel - palms (includes all commodities in this subgroup)
FT 2400	Açaí <i>Euterpe oleracea</i> Mart.
FT 2401	Apak palm <i>Brahea dulcis</i> (Kunth) Mart.
-	Assai palm , see Açaí, FT 2400
FT 2402	Bacaba palm <i>Oenocarpus bacaba</i> Mart.
FT 2403	Babaca-de-leque <i>Oenocarpus distichus</i>
FT 0295	Date <i>Phoenix dactylifera</i> L.
FI 0333	Doum or Dum palm <i>Hyphaene thebaica</i> (L.) Mart.
FT 2404	Jelly palm <i>Butia capitata</i> (Mart.) Becc.
FT 2405	Patauá <i>Oenocarpus bataua</i> Mart.
FT 2406	Peach palm <i>Bactris gasipaes</i> Kunth var. <i>gasipaes</i>

ASSORTED TROPICAL AND SUB-TROPICAL FRUITS - INEDIBLE PEEL**Class A**

Type 1	Fruits	Group 006	Group Letter Code FI
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The Assorted tropical and sub-tropical fruits - inedible peel are derived from the immature or mature fruits of a large variety of perennial plants, usually shrubs or trees. Fruits are fully exposed to pesticides applied during the growing season (period of fruit development) but the edible portion is protected by skin, peel or husk. The edible part of the fruits may be consumed in a fresh or processed form.

The group Miscellaneous fruits – inedible peel is divided in 5-6 subgroups:

006A	Assorted tropical and sub-tropical fruits - inedible peel – small
006B	Assorted tropical and sub-tropical fruits - inedible smooth peel - large
006C	Assorted tropical and sub-tropical fruits - inedible rough or hairy peel - large
006D	Assorted tropical and sub-tropical fruits - inedible peel - cactus
006E	Assorted tropical and sub-tropical fruits - inedible peel - vines
006F	Assorted tropical and sub-tropical fruits - inedible peel - palms

Portion of the commodity to which the MRL applies (and which is analysed): Whole fruit unless qualified: e.g., banana pulp. Pineapple after removal of crown. Avocado, mangos and similar fruit with hard seeds: Whole commodity after removal of stone but calculated on whole fruit.

Group 006	Assorted tropical and sub-tropical fruits - inedible peel
Code No.	Commodity
FI 0030	Assorted tropical and sub-tropical fruits - inedible peel
006A	Assorted tropical and sub-tropical fruits - inedible peel – small
Code No.	Commodity
FI 2021	Assorted tropical and sub-tropical fruits - inedible peel – small (includes all commodities in this subgroup)
FI 2450	Aisen <i>Boscia senegalensis</i> (Pers.) Lam
FI 2451	Bael fruit <i>Aegle marmelos</i> (L.) Corrêa
FI 2452	Burmese grape <i>Baccaurea ramiflora</i> Lour.
-	Cat's eyes <i>Dimocarpus Longan</i> Lour. subsp. <i>malesianus</i> Leenh., see Longan FI 0342
FI 2453	Ingá <i>Inga vera</i> Willd. subsp. <i>affinis</i> (DC.) T.D. Penn.
FI 0343	Litchi <i>Litchi chinensis</i> Sonn.; syn: <i>Nephelium litchi</i> Camb.
FI 0342	Longan , see Codex stan. 220-1999 <i>Dimocarpus longan</i> Lour. syn: <i>Nephelium longana</i> (Lam.) Camb.; <i>Euphoria longana</i> Lam.
FI 2454	Madras-thorn <i>Pithecellobuim dulce</i> (Roxb.) benth]
FI 2455	Manduro <i>Balanites maughamii</i> Sprague
FI 2456	Matisia <i>Matisia cordata</i> Humb. & Bonpl.
FI 2457	Mesquite <i>Prosopis juliflora</i> (Sw.) DC.
FI 2458	Mongongo <i>Schinziophyton rautanenii</i> (Schinz) Radcl.-Sm
FI 2459	Pawpaw, Small-flower <i>Asimina parviflora</i> (Michx.) Dunal

FI 2460	Satinleaf <i>Chrysophyllum oliviforme</i> L.
FI 2461	Sierra Leone-tamarind <i>Dallium guineense</i> Willd.
FI 0366	Spanish lime <i>Melicoccus bijugatus</i> Jacq.; syn: <i>Melicocca bijuga</i> L.
FI 2462	Velvet tamarind <i>Dallium indicum</i> L.
FI 2463	Wampi <i>Clausena lansium</i> (Lour.) Skeels
FI 2464	White star apple <i>Chrysophyllum albidum</i> G. Don
006B Assorted tropical and sub-tropical fruits - inedible smooth peel - large	
Code No.	Commodity
FI 2022	Assorted tropical and sub-tropical fruits - inedible smooth peel – large (includes all commodities in this subgroup)
FI 2480	Abiu <i>Pouteria caimito</i> (Ruiz & Pav.) Radlk.
FI 0325	Akee apple <i>Blighia sapida</i> K.D. Koenig
FI 0326	Avocado <i>Persea americana</i> Mill.
FI 2481	Bacuri <i>Platonia insignis</i> Mart.
FI 0327	Banana Subsp. and cultivars of <i>Musa</i> ssp. and hybrids
-	Banana, Dwarf , See Banana, FI 0327 <i>Musa</i> hybrids, AAA group; syn: <i>M. cavendishii</i> Lambert; <i>M. nana</i> Lour.
FI 2482	Binjai <i>Mangifera caesia</i> Jack
FI 0330	Canistel <i>Pouteria campechiana</i> (Kunth.) Baenhi; this species includes former <i>Lacuma nervosa</i> A.DC. and <i>L. salicifolia</i> Kunth.
FI 2483	Cupuaçú <i>Theobroma grandiflorum</i> (Willd. ex Spreng.) K. Schum.
-	Egg fruit , see Canistel, FI 0330

FI 2484	Etambe <i>Mangifera zeylanica</i> (Blume) Hook. F.
FI 0335	Feijoa <i>Acca sellowiana</i> (O. Berg) Burret syn: <i>Feijoa sellowiana</i> (O. Berg) O. berg
FI 2485	Jatobá <i>Hymenaea courbaril</i> L.
FI 2486	Kei apple <i>Dovyalis caffra</i> (Hook. F. & Harv.) Warb.
FI 2487	Kokam <i>Garcinia indica</i> (Thouars) Choisy
FI 2488	Langsat <i>Lansium domesticum</i> Corrêa Syn: <i>Aglaia domestica</i> ; <i>A. dookoo</i>
FI 2489	Lanjut <i>Mangifera legenifera</i> Griff.
FI 2490	Lucuma <i>Pouteria lucuma</i> (Ruiz & Pav.) Kuntze
-	Lulo , see Naranjilla, FI 0349
FI 2491	Mabolo <i>Diospyros blancoi</i> A. DC.
FI 0345	Mango <i>Mangifera indica</i> L.
FI 2492	Mango, Horse <i>Mangifera foetida</i> Lour.
FI 2493	Mango, Saipan <i>Mangifera odorata</i> Griff.
FI 0346	Mangostan <i>Garcinia mangostana</i> L.
-	Mangosteen , see Mangostan, FI 0346
FI 0349	Naranjilla <i>Solanum quitoense</i> Lam.
FI 2494	Paho <i>Mangifera altissima</i> Blanco
FI 0350	Papaya <i>Carica papaya</i> L.

FI 2495	Pawpaw <i>Asimina triloba</i> (L.) Dunal
FI 2496	Pelipisan <i>Mangifera casturi</i> Kosterm.
FI 2497	Pequi <i>Caryocar brasiliense</i> Cambess.; <i>C villosum</i> (Aubl.) Pers
FI 0352	Persimmon, American <i>Diospyros virginiana</i> L.
-	Plantain, See Banana, FI 0327 <i>Musa x paradisiaca</i> L., var. <i>sapientum</i> (L.) Kuntze
FI 0355	Pomegranate <i>Punica granatum</i> L.
FI 2498	Quandong <i>Satalum acuminatum</i> (R. Br.) DC.
-	Quito orange, see Naranjilla, FI 0349
FI 0360	Sapote, Black <i>Diospyros digyna</i> Jacq. Syn: <i>D.ebenaster</i> Retz.
FI 0361	Sapote, Green <i>Pouteria viridis</i> (Pittier) Cronquist Syn: <i>Calocarpum viride</i> Pitt.
FI 0363	Sapote, White <i>Casimiroa edulis</i> La Llave & Lex
FI 2499	Sataw <i>Parkia speciosa</i> Hassk
FI 0367	Star apple <i>Chrysophyllum cainito</i> L.
FI 0312	Tamarillo, <i>Solanum betaceum</i> Cav. Syn: <i>Cyphomandra betacea</i> (Cav.) Sendt
FI 2500	Tamarind-of-the-Indies <i>Vangueria madagascariensis</i> J.F/Gmel.
-	Tree tomato, See Tamarillo, FI 0312
FI 2501	Wild loquat <i>Uapaca kirkiana</i> Müll. Agr.

006C Assorted tropical and sub-tropical fruits – inedible rough or hairy peel - large

Code No.	Commodity
FI 2023	Assorted tropical and sub-tropical fruits – inedible rough or hairy peel - large (includes all commodities in this subgroup)
FI 2520	Atemoya <i>Annona x atemoya</i> Mabb.
-	Baobab fruit, see Monkey-bread tree FI 2524
FI 2521	Biriba <i>Rollinia mucosa</i> (Jacq.) Baill.
FI 0329	Breadfruit <i>Artocarpus altilis</i> (Parkinson) Fosberg syn: <i>Artocarpus communis</i> J.R. et G. Forster;
FI 2522	Champedak <i>Artocarpus integer</i> (Thunb.) Merr.
FI 0331	Cherimoya <i>Annona cherimola</i> Mill.
FI 0332	Custard apple <i>Annona reticulata</i> L.
FI 0334	Durian <i>Durio zibethinus</i> L..
FI 0371	Elephant apple <i>Limonia acidissima</i> L. syn: <i>Feronia limonia</i> (L.) Swing; <i>Feronia elephantum</i> Corrêa
-	Guanabana , see Soursop, FI 0365
FI 0337	Ilama <i>Annona macrophyllata</i> Donn. Sm. Syn: <i>A. diversifolia</i> Saff.
-	Indian wood apple , see Elephant apple, FI 0371
FI 0338	Jackfruit <i>Artocarpus heterophyllus</i> Lam.; syn: <i>A. integrifolius</i> auct
FI 0344	Mammey apple <i>Mammea americana</i> L.
FI 2523	Marang <i>Artocarpus odoratissimus</i> Blanco
FI 0347	Marmalade-box <i>Genipa americana</i> L.

FI 2524	Monkey-bread tree <i>Adansonia digitata</i> L.
FI 0353	Pineapple <i>Ananas comosus</i> (L.) Merrill;
FI 2525	Poshte <i>Annona liebmaniana</i> Baill.
FI 0357	Pulasan <i>Nephelium ramboutan-ake</i> (labill.) Leenh.
FI 0358	Rambutan <i>Nephelium lappaceum</i> L.
FI 0359	Sapodilla <i>Manilkara zapota</i> (L.) P. Royen syn: <i>Manilkara achras</i> (Mill.) Fosberg; <i>Achras zapota</i> L.]
FI 0362	Sapote, Mammey <i>Pouteria sapota</i> (Jacq.) H.E. Moore & Stearn Syn: <i>Calocarpum sapota</i> (Jacq.) Merr.
FI 2526	Screwpine <i>Pandanus tectorius</i> Parkinson; <i>P. utilis</i> Bory; <i>P. leram</i> Jones ex Fontana; <i>P. julianettii</i> Martelli
FI 2527	Soncoya <i>Annona purpurea</i> Moc. & Sessé ex Dunal
FI 0365	Soursop <i>Annona muricata</i> L.
FI 2528	Sun sapote <i>Licania platypus</i> (Hemsl.) Fritsch
FI 0368	Sugar apple <i>Annona squamosa</i> L.
-	Sweetsop , see Sugar apple, FI 0368
006D Assorted tropical and sub-tropical fruits - inedible peel - cactus	
Code No.	Commodity
FI 2024	Assorted tropical and sub-tropical fruits - inedible peel - cactus (includes all commodities in this subgroup)
-	Dragon fruit , see Pitaya, FI 2540 <i>H. undatus</i> (Haw.) Britton & Rose
-	Indian fig , see Prickly pear, FI 0356
FI 2540	Pitaya <i>Hylocereus</i> spp. ; <i>H. undatus</i> (Haw.) Britton & Rose; <i>H. Megalanthus</i> (K. Schum. Ex Vaupel) Ralf Bauer; <i>H. Polyrhizus</i> (F.A.C. Weber) Britton & Rose; <i>H. Ocamponis</i> (Salm-Dyck) Britton & Rose <i>H. triangularis</i> (L.) Britton&Rose

FI 0356	Prickly pear <i>Opuntia ficus-indica</i> (L.) P. Miller; <i>O. Engelmannii</i> Salm-Dyck ex Engelm. var. <i>Lindheimeri</i> (Engelman.) B.D. Parfitt & Pinkava
FI 2541	Saguaro <i>Carnegiea gigantea</i> (Engelm.) Britton & Rose
006E Assorted tropical and sub-tropical fruits - inedible peel - vines	
Code No.	Commodity
FI 2025	Assorted tropical and sub-tropical fruits - inedible peel - vines (includes all commodities in this subgroup)
-	Chinese gooseberry , see Kiwifruit, FI 0341
FI 2560	Grandilla <i>Passiflora ligularis</i> Juss.
FI 2561	Grandilla, Giant <i>Passiflora quadrangularis</i> L.
FI 0341	Kiwifruit <i>Actinidia deliciosa</i> (A. Chev.) C. F. Liang & A. R. Ferguson; <i>A. chinensis</i> Planch. and hybrids
FI 2562	Monstera <i>Monstera deliciosa</i> Liebm.
FI 2563	Passionflower, Winged-stem <i>Passiflora alata</i> Curtis
FI 2564	Passion fruit, Banana <i>Passiflora tripartita</i> (Juss.) Poir. Var. <i>mollissima</i> (Kunth) Holm-Niels & P. Jørg.
FI 0351	Passion fruit Cultivars of <i>Passiflora edulis</i> Sims
006F Assorted tropical and sub-tropical fruits - inedible peel - palms	
Code No.	Commodity
FI 2026	Assorted tropical and sub-tropical fruits - inedible peel -palms (includes all commodities in this subgroup)
FI 2580	Coconut, Young <i>Cocos nucifera</i> L.
FI 2581	Guriri <i>Allagoptera arenaria</i> (Gomes) Kuntze
FI 2582	Muriti <i>Mauritia flexuosa</i> L.f.
FI 2583	Palmyra palm fruit <i>Borassus flabellifer</i> L.
FI 2584	Salak <i>Salacca zalacca</i> (Gaertn.) Voss

APPENDIX IX

**DRAFT PRINCIPLES AND GUIDANCE ON THE SELECTION OF REPRESENTATIVE COMMODITIES
FOR THE EXTRAPOLATION OF MRLS TO COMMODITY GROUPS**

(At Step 7)

INTRODUCTION

Residue extrapolation is the process by which the residue levels on representative commodities are utilized to estimate residue levels on related commodities in the same commodity group or subgroup for which trials have not been conducted. Representative commodities are chosen based on their commercial importance and the similarity of their morphology and residue characteristics to other related commodities in the group or subgroup. Ideally representative commodities are the most economically important commodities in production and/or consumption in a group or subgroup and have a greater dietary burden and have residue characteristics similar to other members of the group or subgroup. Residue extrapolation is a common consideration utilised by regulators internationally for ensuring that data requirements are only at a level that is scientifically justified in conducting risk assessment and to ensure the regulatory process does not become unnecessarily burdensome especially for minor crops.

The objective of this document is to (1) propose criteria for the selection of representative commodities; (2) propose example representative commodities and (3) provide a detailed justification for the selection of the representative commodities.

GENERAL PRINCIPLES

Representative commodities within each Codex Classification commodity group and subgroup will be selected and proposed, based on consideration of all available information. The following principles will be used for the selection of representative commodities:

- A representative commodity is most likely to contain the highest residues.
- A representative commodity is likely to be major in terms of production and/or consumption.
- A representative commodity is most likely similar in morphology, growth habit, pest problems and edible portion to the related commodities within a group or subgroup.

The application of the three principles in the selection of representative commodities is based on the assumption that all of the commodities, covered by the commodity group MRL, are produced following a similar¹ use pattern or GAP.

To facilitate the global use of the commodity groups for MRLs, alternative representative commodities may be selected giving flexibility for use of residue research conducted in different countries or regions that may vary due to regional differences in dietary consumption and/or areas of production for certain commodities.

Note: Table 1 in this document is provided to (1) separate the selection of representative commodities from the Codex Classification itself; (2) propose examples of representative commodities in parallel with the respective Codex commodity grouping classification revisions; (3) provide flexibility on the selection of representative crops and (4) provide guidance not only to CCPR and CCPR members, but also to JMPR, product manufacturers and other data generators.

Detailed background information regarding production, consumption, MRLs and characteristics and justification for selection of the representative commodities according to the indicated principles were provided in working documents considered by the Committee when developing the representative commodities for each commodity group.

GUIDANCE AND PROCEDURES

As proposals for the revision of the Codex Classification are made and revised commodity groupings are developed and provided to the CCPR for their review, proposals on representative commodities will also be provided in parallel with the respective commodity grouping revisions and will advance through the CCPR step process for adoption by the CAC.

As comments are addressed on the revisions of the classification and the proposed representative commodities and these are approved by the CCPR and accepted by the CAC, two separate documents will be created and maintained: (1) the revised Codex Classification (without mention of representative commodities) and (2) principles and guidance on the selection of representative commodities.

The JMPR may be advised to use the representative commodities adopted by the CAC. However, JMPR may use other representative commodities (including those which may be specifically requested by member nations) on a case-by-case basis. The JMPR will be requested to provide to the CCPR justification for the use of any alternative representative commodities, based on all available data.

¹ Submission and Evaluation of Pesticide Residues Data for the Estimation of Maximum Residue Levels in Food and Feed (Section 6.7, Point a), FAO Plant Production and Protection Paper 197, Food and Agriculture Organization of the United Nations, Rome, 2009 (Second Edition).

Alternative Representative Commodities

To facilitate the global use of the commodity groups for MRLs, alternative representative commodities may be selected giving flexibility for use of residue research conducted in different countries or regions that may vary due to regional differences in dietary consumption and/or areas of production for certain commodities. Table 1 in this document proposes examples of representative commodities for commodity groups. Depending on country or regional differences, alternative representative commodities may be proposed by a country. For example, leeks may be proposed as an alternative representative commodity for green onions in the green onion subgroup of Bulb Vegetables.

Precedence in Selection of Representative Commodities

In situations where a representative commodity does not meet all three of the above principles, a representative commodity should at least meet the first two principles (likely to contain the highest residues and also major in terms of production and/or consumption).

Definition of Similar Residues

When representative commodities are utilized to extrapolate to other members of a commodity group, it is based on the assumption that the representative commodities will have similar residues. "Similar residues" are difficult to define numerically, because this would require knowing actual residues for all commodities in a group. Rather, the expectation of similar residues is based upon consideration of all of the information available. This information will be prepared for each commodity group and will form the basis of the proposals for representative commodities.

Use and Combination of Data Sets

When representative commodities are utilized to extrapolate MRLs to other members of the commodity group, MRLs may be calculated as either the highest MRL calculated for any of the individual representative commodities, and the ALARA2 principle needs to be considered, or the residue data may be combined and the MRL calculated from the larger combined data set.

Wider Extrapolations

A representative commodity should meet at least the first two principles described above, i.e. likely to contain the highest residues and also major in terms of production and/or consumption. However, it may not always fit well with the growth habits, or pest problems of morphology within one group or subgroup. In such situations, extrapolations beyond the members of a commodity group may be appropriate. These can be considered on a case-by-case basis when commodities (with similar GAPs) have similar size, shape and surface area. Examples of these possible wider extrapolations include (1) translation of certain stone or pome fruit MRLs to a tropical fruit; (2) where residues are all <LOQ for pre-emergent herbicide uses and (3) seed treatments for non systemic pesticides.

Table 1. Selection and Examples of Representative Commodities

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
Group 001 Citrus Fruits	Lemon or Lime; and Mandarin; and Orange; and Pummelo or Grapefruit	<u>Citrus Fruit (FC 0001)</u> : Australina blood lime; Australian desert lime; Australian round lime; Bergamot; Bigarade; Blood orange; Brown River finger-lime; Calamondin; Chinotto; Chironja; Citron; Clementine; Cleopatra mandarin; Dancy mandarin; Grapefruit; Kaffir Lime; King mandarin; Lemon; Lime; Lime, Sweet; Malta orange; Mandarin; Mediterranean mandarin; Mexican Lime; Mount White-lime; Myrtle-leaf orange; Natsudaidai; New guinea wild lime; Orange, Bitter; Orange Sour; Orange, Sweet; Pomelo; Pummelo; Russell River-lime; Satsuma mandarin; Seville Orange; Shaddock; Tachibana orange; Tahiti Lime; Tangelo (small and medium cultivars); Tangelo (large size cultivars); Tangelodo; Tangerine; Tangors; Tankan mandarin; Trifoliolate orange; Ugli/Uniq Fruit; Unshu orange; Willowleaf mandarin; Yuja
Subgroup 001A, Lemons and Limes	Lemon or Lime	<u>Lemons and Limes (FC 0002)</u> : Australina blood lime; Australian desert lime; Australian round lime; Brown River finger-lime; Citron; Kaffir Lime; Lemon; Lime; Lime, Sweet; Mexican Lime; Mount White-lime; New guinea wild lime; Russell River-lime; Tahiti Lime; Yuja
Subgroup 001B, Mandarin	Mandarin	<u>Mandarins (FC 003)</u> : Calamondin; Clementine; Cleopatra mandarin; Dancy mandarin; King mandarin; Mandarin; Mediterranean mandarin; Satsuma mandarin; Tangelo (small and medium size cultivars); Tangerine; Tangors; Tankan mandarin; Unshu orange; Willowleaf mandarin
Subgroup 001C, Oranges, Sweet, Sour	Orange	<u>Oranges, Sweet, Sour (FC 004)</u> : Bergamot; Bigarade; Blood orange; Chinotto; Chironja; Malta orange; Myrtle-leaf orange; Orange, Bitter; Orange Sour; Orange, Sweet; Seville Orange; Tachibana orange; Trifoliolate orange
Subgroup 001D, Pummelos	Pummelo or Grapefruit	<u>Pummelos and Grapefruit (FC 005)</u> : Grapefruit; Natsudaidai; Pomelo; Pummelo; Shaddock; Tangelo (large size cultivars); Tangelodo; Ugli/Uniq Fruit

¹ Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

² Detailed information considered at the 43rd session of the Codex Committee on Pesticide Residues.

Table 1 Selection and Examples of Representative Commodities (continued)

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
Group 002 Pome Fruits	Apple and Pear	<u>Pome Fruit (FP 0009)</u> : Apple; Azarole; Chinese quince; Crab-apple; Japanese medlar; Loquat; Mayhaw; Medlar; Nashi pear; Pear; Oriental pear; Quince; Sand pear; Tejocote; Wild pear
Group 003 Stone Fruits	Cherry, Sweet or Cherry, Sour; and Plum or Prune Plum; and Peach or Apricot	<u>Stone fruits (FS 0012)</u> : Cherry, black; Cherry, Nanking; Cherry Sour; Cherry, Sweet; Cherry, tart; Choke cherry; Morello; Bullace; Cherry plum; Chicksaw plum; Damsons plums; Greengage plums; Klamath plum; Myrobolan plum; Plum American; Plum beach; Plum, Japanese, Plum Mirabelle; Plumcot; Prunes; Sloe; Apricot; Japanese apricot; Nectarine; Peach
Subgroup 003A, Cherries	Cherry, Sweet or Cherry, Sour	<u>Cherries (FS 0013)</u> : Cherry, black; Cherry, Nanking; Cherry Sour; Cherry, Sweet; Cherry, tart; Choke cherry; Morello
Subgroup 003B, Plums	Plum or Prune Plum	<u>Plums (FS 0014)</u> : Bullace; Cherry plum; Chicksaw plum; Damsons plums; Greengage plums; Klamath plum; Myrobolan plum; Plum American; Plum beach; Plum, Japanese, Plum Mirabelle; Plumcot; Prunes; Sloe
Subgroup 003C, Peaches	Peach or Apricot	<u>Peaches (FS 2001)</u> : Apricot; Japanese apricot; Nectarine; Peach

Table 1. Selection and Examples of Representative Commodities (continued)

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
Group 004 Berries and other small fruits	Blackberry or Raspberry; and Blueberry or Currants, black, red or white; and Elderberry; and Grape; and Strawberry	<u>Berries and other small fruits (FB 0018)</u> : Blackberries; Boysenberry; Dewberries; Korean Black Raspberry; Korean Raspberry; Loganberry; Olallie berry; Raspberries, Red, Black; Youngberry; Vaccinium berries; Blueberries; Aronia berries; Bearberry; Bilberry; Bilberry, Bog; Bilberry, Red; Blueberry, Highbush; Blueberry, Lowbush; Blueberry, Rabbiteye; Buffalo currant; Chilean guava; Cowberry; Currants, Black, Red, White; Gooseberry; European barberry; Huckleberries; Jostaberries; Juneberries; Native currant; Ribberies; Rose hips; Salal; Sea buckthorn; Whortleberry, Red; Bayberries; Buffaloberry; Che; Elderberries; Guelder rose; Mulberries; Phalsa; Rowan; Service berries; Silverberry, Russian; Arguta kiwifruit; Amur river grape; Grapes; Schisandrberry; Table grapes; Tara vine; Wine grapes; Bakeapple; Cranberry; Cloudberry; Muntries; Partridge berry; Squaw vine; Strawberry; Strawberries, Wild; Strawberry, Musky
Subgroup 004A, Cane berries	Blackberry or Raspberry	<u>Cane berries (FB 2005)</u> : Blackberries; Boysenberry; Dewberries; Korean Black Raspberry; Korean Raspberry; Loganberry; Olallie berry; Raspberries, Red, Black; Youngberry
Subgroup 004B, Bush berries	Blueberry or Currants, black, red or white	<u>Bush berries (FB 2006)</u> : Vaccinium berries; Blueberries; Aronia berries; Bearberry; Bilberry; Bilberry, Bog; Bilberry, Red; Blueberry, Highbush; Blueberry, Lowbush; Blueberry, Rabbiteye; Buffalo currant; Chilean guava; Cowberry; Currants, Black, Red, White; Gooseberry; European barberry; Huckleberries; Jostaberries; Juneberries; Native currant; Ribberies; Rose hips; Salal; Sea buckthorn; Whortleberry, Red
Subgroup 004C, Large shrub/tree berries	Elderberry	<u>Large shrub/tree berries (FB 2007)</u> : Bayberries; Buffaloberry; Che; Elderberries; Guelder rose; Mulberries; Phalsa; Rowan; Service berries; Silverberry, Russian
Subgroup 004D, Small fruit vine climbing	Grapes	<u>Small fruit vine climbing (FB 2008)</u> : Arguta kiwifruit; Amur river grape; Grapes; Schisandrberry; Table grapes; Tara vine; Wine grapes
Subgroup 004E, Low growing berries	Strawberry	<u>Low growing berries (FB 2009)</u> : Bakeapple; Cranberry; Cloudberry; Muntries; Partridge berry; Squaw vine; Strawberry; Strawberries, Wild; Strawberry, Musky

Table 1. Selection and Examples of Representative Commodities (continued)

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
<p>Group 005 Assorted tropical and sub-tropical fruits – edible peel</p>	<p>Olive; and Fig or Guava; and Date</p>	<p><u>Assorted tropical and sub-tropical fruits – edible peel (FT 0026)</u>: Açai; African plum; Almondette; Ambarella; Apak palm; Apple berry; Arazá; Arbutus berry; Babaco; Bacaba palm; Bacaba-de-leque; Barbados cherry (acerola); Bayberry, Red; Bignay; Bilimbi; Breadnut; Cabeluda; Cajou (pseudofruit); Cambucá; Carandas-plum; Carob; Cashew apple; Ceylon iron wood; Ceylon olive; Cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; Chirauli-nut; Ciruela verde; Coco plum; Date; Davidson's plum; Desert date; Doum palm; False sandalwood; Fig; Fragrant Manjack; Gooseberry, Abyssinian; Gooseberry, Ceylon; Gooseberry, Indian; Gooseberry, Otaheite; Governor's plum; Grumichama; Guabiroba; Guava; Guava, Brazilian; Guava, Cattley, Guava, Costa Rican; Guava, Para; Guava berry; Guayabillo; Hog plum (yellow mombin); Illawarra plum; Imbé; Imbu; Jaboticaba; Jamaica cherry; Jambolan; Java apple (wax jambu); Jelly palm; Jujube, Chinese; Jujube, Indian; Kaffir plum; Kakadu plum; Kapundung; Karnada (Caranda); Kumquats; Kwai muk; Lemon aspen; Limequats; Mangaba; Marian plum; Mombin, Malayan; Mombin, purple; Monkeyfruit; Monos plum; Mountain cherry; Nance; Natal plum; Noni; Olives (table olives); Papaya, Mountain; Pataua; Peach Palm; Persimmon, Black; Persimmon, Japanese; Pitomba; Pomerac; Rambai; Rose apple; Rumberry; Sea grape; Sentul; Sete-capotes; Silver aspen; Star fruit (carambola); Surinam cherry; Tamarind (sweet varieties); Uvalha; Water apple; Water berry; Water pear</p>
<p>Subgroup 005A, Assorted tropical and sub-tropical, Edible Peel – Small</p>	<p>Olive</p>	<p><u>Edible Peel - Small (FT 2011)</u>: African plum; Almondette; Apple berry; Arbutus berry; Barbados cherry (acerola); Bayberry, Red; Bignay; Breadnut; Cabeluda; Carandas-plum; Ceylon iron wood; Ceylon olive; Cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; Chirauli-nut; Coco plum; Desert date; False sandalwood; Fragrant Manjack; Gooseberry, Abyssinian; Gooseberry, Ceylon; Gooseberry, Otaheite; Governor's plum; Grumichama; Guabiroba; Guava berry; Hog plum (yellow mombin); Illawarra plum; Jamaica cherry; Jambolan; Java apple (wax jambu); Jujube, Chinese; Kaffir plum; Kakadu plum; Karnada (Caranda); Kumquats; Kapundung; Lemon aspen; Limequats; Monos plum; Mountain cherry; Olives (table olives); Persimmon, Black; Pitomba; Rumberry; Sea grape; Sete-capotes; Silver aspen; Water apple; Water berry; Water pear</p>

Table 1. Selection and Examples of Representative Commodities (continued)

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
Subgroup 005B, Assorted tropical and sub-tropical, Edible Peel – Large	Fig or Guava	<p><u>Edible Peel - Large (FT 2012)</u>: Ambarella; Arazá; Babaco; Bilimbi; Cajou (pseudofruit); Cambucá; Carob; Cashew apple; Ciruela verde; Davidson's plum; Fig; Gooseberry, Indian; Guava; Guava, Brazilian; Guava, Cattley, Guava, Costa Rican; Guava, Para; Guayabillo; Imbé; Imbu; Jaboticaba; Jujube, Indian; Kwai muk; Mangaba; Marian plum; Mombin, Malayan; Mombin, purple; Monkeyfruit; Nance; Natal plum; Noni; Papaya, Mountain; Persimmon, Japanese; Pomerac; Rambai; Rose apple; Sentul; Star fruit (carambola); Surinam cherry; Tamarind (sweet varieties); Uvalha</p>
Subgroup 005C, Assorted tropical and sub-tropical, Edible Peel – Palms	Date	<p><u>Edible Peel - Palms (FT 2013)</u>: Açai; Apak palm; Bacaba palm; Bacaba-de-leque; Date; Doum palm; Jelly palm; Patauá; Peach Palm</p>

Table 1. Selection and Examples of Representative Commodities (continued)

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
<p>Group 006 Assorted tropical and sub-tropical fruits – inedible peel</p>	<p>Litchi (lychee) or Spanish Lime or Longan; Avocado; Pomegranate or Mango; Banana and Papaya; Atemoya; Pineapple; Pitahaya; Prickly pear; Kiwifruit or Passionfruit and Muriti or Palmyra Palm</p>	<p><u>Assorted tropical and sub-tropical fruits – inedible peel (FI 0030)</u>: Abiu; Aisen; Akee apple; Atemoya; Avocado; Bacuri; Bael fruit; Banana; Binjai; Biriba; Breadfruit; Burmese grape; Canistel; Cupuaçu; Champedak; Cherimoya; Custard apple; Durian; Elephant apple; Etambe; Feijoa; Grandilla; Grandilla, Giant; Guriri; Ilama; Ingá; Jackfruit; Jatobá; Kei apple; Kiwifruit; Kokam; Langstat; Lanjut; Longan; Lucuma; Litchi (lychee); Mabolo; Madras-thorn; Mammy apple; Manduro; Mango; Mango, horse; Mango, Saipan; Mangosteen; Marang; Marmalade-box; Matisia; Mesquite; Mongongo; Monkey-bread tree; Monstera; Muriti; Naranjilla; Paho; Palmyra palm; Papaya; Passionflower, Winged-stem; Passion fruit; Passion fruit, banana; Pawpaw; Pawpaw, small flower; Pelipisan; Pequi; Persimmon, American; Pineapple; Pitaya; Pomegranate; Poshte; Prickly pear, Pulasan; Quandong; Rambutan; Saguaro; Salak; Sapodilla; Sapote, black; Sapote, green; Sapote, Mammey; Sapote, white; Sataw; Satinleaf; Screwpine; Sierra Leone-tamarind; Soncoya; Soursop; Spanish lime; Star apple; Sugar apple; Sun sapote; Tamarillo (tree tomato); Tamarind-of-the-Indies; Velvet tamarind; Wampi; White star apple; Wild loquat;</p>
<p>Subgroup 006A, Assorted tropical and sub-tropical, Inedible Peel, Small</p>	<p>Litchi (lychee) or Spanish Lime or Longan</p>	<p><u>Inedible Peel - Small (FI 2021)</u>: Aisen; Bael fruit; Burmese grape; Ingá; Litchi (lychee); Longan; Madras-thorn; Manduro; Matisia; Mesquite; Mongongo; Pawpaw, small flower; Satinleaf; Sierra Leone-tamarind; Spanish lime; Velvet tamarind; Wampi; White star apple</p>
<p>Subgroup 006B, Assorted tropical and sub-tropical, Inedible Smooth Peel - Large</p>	<p>Avocado; Pomegranate or Mango; Banana and Papaya</p>	<p><u>Inedible Smooth Peel - Large (FI 2022)</u>: Abiu; Akee apple; Avocado; Bacuri; Banana; Binjai; Canistel; Cupuaçu; Etambe; Feijoa; Jatobá; Kei apple; Kokam; Langstat; Lanjut; Lucuma; Mabolo; Mango; Mango, horse; Mango, Saipan; Mangosteen; Naranjilla; Paho; Papaya; Pawpaw; Pelipisan; Pequi; Persimmon, American; Pomegranate; Quandong; Sapote, black; Sapote, green; Sapote, white; Sataw; Star apple; Tamarind-of-the-Indies; Tamarillo (tree tomato); Wild loquat</p>

Table 1. Selection and Examples of Representative Commodities (continued)

Codex Group / Subgroup	Examples of Representative Commodities ^{1,2}	Extrapolation to the following commodities
Subgroup 006C, Assorted tropical and sub-tropical, Inedible, Rough or Hairy Peel - Large	Atemoya and Pineapple	<u>Inedible rough or hairy peel - Large (FI 2023)</u> : Atemoya; Biriba; Breadfruit; Champedak; Cherimoya; Custard apple; Durian; Elephant apple; Ilama; Jackfruit; Mammy apple; Marmalade-box; Marang; Monkey-bread tree; Pineapple; Poshte; Pulasan; Rambutan; Sapodilla; Sapote, Mammey; Screwpine; Soncoya; Soursop; Sugar apple; Sun sapote
Subgroup 006D, Assorted tropical and sub-tropical, Inedible Peel - Cactus	Pitahaya and Prickly pear	<u>Inedible Peel - Cactus (FI 2024)</u> : Pitahaya; Prickly pear; Saguaro
Subgroup 006E, Assorted tropical and sub-tropical, Inedible Peel - Vines	Kiwifruit or Passionfruit	<u>Inedible Peel - Vines (FI 2025)</u> : Granadilla; Granadilla, Giant; Kiwifruit; Monstera; Passionflower, Winged-stem; Passionfruit; Passionfruit, banana
Subgroup 006F, Assorted tropical and sub-tropical, Inedible Peel - Palms	Muriti or Palmyra Palm	<u>Inedible Peel - Palms (FI 2026)</u> : Guriri; Muriti; Palmyra Palm; Salak

APPENDIX X

DRAFT REVISION OF THE GUIDELINES ON THE ESTIMATION OF MEASUREMENT UNCERTAINTY OF RESULTS
FOR THE DETERMINATION OF PESTICIDE RESIDUES (ANNEX TO CAC/GL 59-2006)

(At Step 5/8)

Introductory notes

1. As noted in the Guideline document CAC/GL 59-2006, the estimation of measurement uncertainty (MU) associated with analytical data is a requirement for laboratories accredited under ISO/IEC 17025 and an expectation for all laboratories operating under Good Laboratory Practice (GLP) in pesticide residue analysis. Decisions in regard to compliance of food, whether for domestic or international standards for chemical residues and contaminants, need to take into consideration the uncertainty associated with the test results reported by laboratories for analysis of specific lots or consignments.
2. It is not uncommon for laboratories to report widely different estimates of MU in Proficiency Tests (PT) despite the fact that they employ very similar test methods for analysis. This evidence suggests that the estimation of MU still appears to be a developing science for a number of food laboratories. This annex is intended to describe some of the options laboratories might employ in estimating measurement uncertainty, particularly the use of in-house method validation, quality control and long-term precision data for multi-residue pesticide methods. It is also anticipated that a more harmonised approach to the estimation of MU for pesticide residue results will minimise possible disputes in compliance decisions for residue levels near MRLs.
3. There are broadly two approaches commonly employed for the determination of MU; the so-called GUM (*Guide to the Expression of Uncertainty in Measurement*) or 'bottom-up' approach and the 'top-down' procedures based around application of analytical precision and bias.
4. The GUM approach is based on a rigorous analysis of all the individual components of an analytical process and the estimation of random and systematic errors assigned to these steps. This process, whilst initially very laborious, requires the analyst to have or develop a detailed understanding of the analytical steps on the process and identify the critical control points in the method. Unless all steps are considered in the process, it is possible to underestimate the MU. On the other hand, some operational errors may cancel out which, if ignored, could provide an overestimate of the uncertainty. It is generally acknowledged that the bottom-up approach is more suited to physical metrology than to analytical chemistry activities and, in particular, to the more complex multi-pesticide residue methods.
5. Proponents of the top-down approach note that laboratory data collected from in-house validation, long-term precision and analytical quality control (QC) is likely to provide more reliable information on MU. Where available, PT data can also be used to estimate MU, either as the sole basis for estimates or more often in combination with in-house data. The inter-laboratory reproducibility data from PT studies can also provide a useful 'benchmark' for single laboratory estimates.
6. All options should be considered in the estimation of MU. The initial aim should be to obtain the best possible estimate using the information available. Initial laboratory estimates should be verified by comparison with alternative methods, literature reports and comparisons from PT studies. Furthermore professional judgement has an important role when estimating and verifying measurement uncertainty. Estimates should be reviewed as more precision data becomes available, for example, within-batch QC data routinely generated during the course of an analytical program.
7. This Annex focuses on the estimation of MU using the top-down approach, based on data obtained from different sources.

Applying a default value for MU for pesticide residues in foods

8. EU member states have adopted a MU 'default' value of +/- 50% for pesticide residues in food consignments entering the EU. The default value is based around the statistical results of a number of EU-based PT studies involving competent residue laboratories participating in a number of multi-residue studies on fruit and vegetables. The mean relative standard deviations reported from a number of these studies have ranged between 20 to 25% providing a MU approximating to 50%.
9. In the absence of other statistical data, a laboratory testing food commodities for compliance with EU pesticide MRL regulations can adopt a default MU of 50% provided it could establish its analytical proficiency through participation in EU or similar PT studies and/or it can demonstrate acceptable long-term precision and bias associated with its test results. In the longer term however, it should be incumbent on the laboratory to verify its adoption of the default MU by independently estimating MU based on in-house precision and validation data.

Precision data derived from the use of the Horwitz relationship

10. In the absence of data from inter-laboratory studies on a particular method, the reproducibility standard deviation, and hence MU, may be determined from an equation reported by Horwitz which correlates reproducibility standard deviation with analyte concentration. The Horwitz relationship between coefficient of variation (CV) and analyte concentration is based on the results from a large number of food-based collaborative studies reported in the literature. The Horwitz equation is also a helpful tool to compare in-house MU estimates against the expected value derived from published inter-laboratory studies.

Precision data derived from inter-laboratory studies (Collaborative Studies and PT Studies)

11. The results reported for inter-laboratory studies are subject to both imprecision and bias. If such studies involve a sufficient number of laboratories and are designed to cover real test conditions (range of analytes and matrices), the reproducibility standard deviations obtained will reflect the typical errors likely to be encountered in practice. PT study data therefore may be used to provide reasonable estimates of measurement uncertainty.

12. Collaborative studies on methods are generally well defined with well documented instructions on the analytical process and usually only involve expert laboratories with reputable experience in residue analysis. Under these conditions the analytical variance is likely to be the best achievable when applying the method under reproducibility conditions, particularly as error contributions from sample in-homogeneity are likely to be negligible. Providing a laboratory can demonstrate an ability to achieve the analytical performance associated with a particular collaborative study, the reproducibility standard deviation obtained for the study will be a good basis for estimating MU. A competent laboratory however, should be able to improve on the inter-laboratory method precision when conducting the method under within-laboratory reproducibility conditions, and hence reduce the MU.

13. If certified reference materials (CRMs) are employed in collaborative studies, the study report should provide an estimate of the bias of the method against the 'certified' value and this will need to be taken into consideration when estimating the MU.

14. In PT studies, it is normal for laboratories to employ their own test method for analysis. The method may be a standard method, a modified standard method or a method developed and validated in-house. Furthermore, there is generally greater variability in the analytical competence of the participating laboratories than is the case for collaborative studies. Because of these factors, the reproducibility standard deviation obtained for PT studies is likely to be larger than that anticipated from a method-based collaborative study. MU based on such data may be larger than the estimates reported by many participant laboratories. Nevertheless, an estimate of MU based on a PT study involving laboratories with a range of expertise using a variety of methods may be more pragmatic and useful for judging compliance of food commodities with respect to pesticide residues in international trade. The 50% default MU applied by the EU member states is based on PT data for a range of pesticides and food matrices.

15. Whether or not a laboratory uses PT data to estimate MU, the information from PT studies is useful to compare and verify estimates based on data such as in-house validation or quality control experiments.

MU derived from in-house validation and quality control data

16. There is general consensus amongst chemical metrologists that the best source of uncertainty data on the analytical process is derived from the laboratory's method validation and/or verification studies and long-term quality control data. This is based on the assumption that the laboratory has undertaken validation and/or verification studies and has sufficient experience to have built up long-term bias and reproducibility data on suitable quality control (QC) samples, CRMs, reference materials (RMs) or matrix spikes.

17. The limited availability of CRMs for pesticide residues in food matrices usually requires laboratories to focus on spiked samples or other suitably characterised samples for internal quality control. The use of matrix-based QC samples such as samples with incurred residues, left-over PT study samples or spiked residue-free laboratory samples provides laboratories with a capability to monitor and control method (and analyst) performance while gathering information on both bias and precision. Control charts are excellent tools for evaluating long-term precision and monitoring statistical control of the analytical process.

18. Bias, where significant, and the uncertainty of bias, should be considered when estimating MU. This is illustrated in the example discussed under paragraph 5.4.

19. Bias can best be determined from the use of CRMs. However given the paucity of CRMs for pesticides in food and the large number of pesticides normally incorporated into a multi-residue screen, it is generally necessary to rely on the recoveries of spiked matrix samples to provide information on method bias.

20. The performance of laboratories in PT studies can further provide a useful indication of the bias of individual laboratories against the consensus values and, in some instances, the spiking level of the PT samples. However, bias should be based on or confirmed by the results from a number of PT studies before it is used as an input in the estimation of MU.

Worked Examples

21. The following worked examples describe acceptable procedures for estimating MU based on different combinations of in-house validation data, in-house precision data and inter-laboratory data. The Horwitz equation and results from PT studies further provide useful benchmarks for comparison with in-house MU estimates.

The following worked examples use hypothetical data for chlorpyrifos as a typical pesticide residue and draw heavily on examples presented in Eurolab Technical report No 1/2007 [1] and the Nordtest Report TR537 [2].

5.1 Estimating MU using the Horwitz Equation

The Horwitz equation expresses reproducibility standard deviation as a function of analyte concentration.

$$u' = 2^{1-0.5 \log c}$$

where

u' = relative reproducibility standard deviation

c = concentration of analyte (in g/g).

The relative expanded MU, U' (at 95% confidence level) may then be estimated by

$$U' = 2u'$$

Since the Horwitz equation is a function of analyte concentration, it will provide a range of MU values depending on pesticide concentration as noted in the following table:

Concentration (mg/kg)	u' (%)	U' (%)
1.0	16	32
0.1	22.6	45
0.01	32	64

Example 1.

A laboratory measures 0.40 mg/kg chlorpyrifos in a sample of tomato.

The Horwitz Equation predicts a relative reproducibility standard deviation of 18.4% at a concentration of 0.40 mg/kg.

$$u' = 18.4 \%$$

$$U' = 2u' = 37\%$$

The laboratory would therefore report the result as 0.40 ± 0.15 mg/kg

The laboratory report should state that the reported uncertainty was an expanded uncertainty with a coverage factor of 2 to give a level of confidence of approximately 95%. Unless stated otherwise, this is generally assumed for results reported with expanded uncertainties.

In the absence of supporting data, the Horwitz equation should be used with some caution and only as an indicator of the likely uncertainty associated with test results. Advances in analytical methodologies, particularly instrumental techniques, have provided the capability to achieve very low limits of quantitation with much less uncertainty than predicted by the Horwitz Equation. Thompson and Lowthian [3] have reported that laboratories tend to out-perform the Horwitz function at low concentrations. It should be noted however that the Thompson concept limits the maximum value for u' for concentrations below 0.1 mg/kg to 22% independent of the concentration.

5.2 Estimating MU by application of the EU default value of 50%

Before applying a default MU, laboratories should ensure that they are able to routinely achieve uncertainties not greater than the default value.

Example 2:

A laboratory measures 0.40 mg/kg chlorpyrifos in a sample of tomatoes. An agreed default value of $\pm 50\%$ is to be applied to the measured result.

Accordingly, the laboratory would report the result as 0.40 ± 0.20 mg/kg.

5.3 Estimating MU based on Intra-laboratory QC and data from PT Studies

5.3.1 Using the assigned (or consensus) value from PT studies

$$U' = 2u'$$

Equation 1

$$u' = \sqrt{u'(R_w)^2 + u'(\text{bias})^2}$$

Equation 2

where

U' = expanded relative uncertainty

u' = combined relative standard uncertainty

$u'(R_w)$ = relative standard uncertainty due to within-laboratory imprecision (relative intra-laboratory reproducibility standard deviation)

$u'(\text{bias})$ = relative standard uncertainty component due to bias

Example 3:

In this example, $u'(R_w)$ is obtained from within-laboratory QC data, preferably long-term QC data and $u'(\text{bias})$ is estimated from PT data.

Laboratory result for chlorpyrifos in tomato = 0.40 mg/kg

Relative standard deviation from analysis of in-batch QC samples of tomato spiked at 0.5 mg/kg with chlorpyrifos (one spiked sample per week for previous 3 months) = 15%.

The laboratory has participated in 6 PT studies where the analytes have included chlorpyrifos in different vegetables and fruit matrices. For these studies, the relative differences between the laboratory's result and the assigned value were -15%, 5%, -2%, 7%, -20% and -12%. An average of 16 laboratories participated in each of the PT studies. The average relative reproducibility standard deviation (S_R) reported for chlorpyrifos in the six studies was 25%.

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

Equation 3

where

$\text{RMS}'_{\text{bias}}$ = root mean square of relative bias value

$u'(\text{C}_{\text{ref}})$ = average relative uncertainty of the assigned values for chlorpyrifos in the six studies.

$$\text{RMS}'_{\text{bias}} = \sqrt{\frac{\sum (\text{bias})^2}{n}} \quad (n = \text{Number of PT studies}) \quad \text{Equation 4}$$

$$= \sqrt{\frac{(-15)^2 + (5)^2 + (-2)^2 + (7)^2 + (-20)^2 + (-12)^2}{6}}$$

$$= 11.9\%$$

$$u'(\text{C}_{\text{ref}}) = \frac{S_R}{\sqrt{m}}$$

Equation 5

where S_R = average relative standard deviation for chlorpyrifos from the six studies

m = average number of participants per study

$$= \frac{25}{\sqrt{16}}$$

$$= 6.3\%$$

$$\text{So, } u'(\text{bias}) = \sqrt{(11.9)^2 + (6.3)^2} = 13.5\%$$

From equation 2,

$$u' = \sqrt{(15)^2 + (13.5)^2} = 20\%$$

From Equation 1, the expanded relative uncertainty (95% confidence) = 40%

The Laboratory should report the result as 0.40 ± 0.16 mg/kg

Notes:

1. The $\text{RMS}'_{\text{bias}}$ value accounts for both bias and the uncertainty of bias.
2. The calculated MU is a best estimate only since the PT data is for different matrices and different concentrations of chlorpyrifos.
3. If possible, MU should be calculated based on data generated at or near the most critical concentration, for example the Codex MRL.

5.3.2 PT Studies with Certified Reference Materials (CRMs)

If a suitable CRM containing chlorpyrifos is distributed as a sample in a PT study, then there would be no need to calculate $u'(\text{C}_{\text{ref}})$ from the PT results.

In this case, $u'(\text{C}_{\text{ref}})$ would be the uncertainty stated for the certified concentration, converted to a relative standard deviation.

For example, if the 95% confidence range for the certified value for chlorpyrifos in the CRM was 0.489 ± 0.031 mg/kg, then:

$$u(C_{\text{ref}}) \quad (\text{standard deviation}) = \frac{0.031}{2} = 0.0155 \text{ mg/kg, and}$$

$$u'(C_{\text{ref}}) \quad (\text{relative standard deviation}) = \frac{0.0155 \times 100}{0.489} = 3.17\%$$

In the unlikely event that several CRMs containing chlorpyrifos were distributed in different rounds of the PT studies, then the mean $u(C_{\text{ref}})$ would be used to calculate U.

In both cases, $\text{RMS}'_{\text{bias}}$ would be calculated using Equation 4.

Example 4:

Study No.	CRM	relative bias	$u'(C_{\text{ref}})$
1	A	-12%	2.3%
2	B	-15%	1.7%
3	C	-3%	2.0%
4	C	5%	2.0%
5	C	-20%	2.0%
6	A	0%	2.3%

$$\text{Mean } u'(C_{\text{ref}}) = 2.05 \%$$

From Equation 4, $\text{RMS}'_{\text{bias}} = 11.6 \%$

From Equation 3, $u'(\text{bias}) = 11.8 \%$

Note:

4. The relative uncertainty associated with CRMs is likely to be less than that associated with assigned or consensus values.

If the laboratory's relative standard uncertainty due to analytical imprecision $u'(R_w)$ remained the same i.e., 15%, then from Equations 1 and 2.

$$u' = 19\%$$

$$U' = 38\%$$

The laboratory could report the result as $0.40 \pm 0.15 \text{ mg/kg}$

5.4 Estimating MU using Intra – laboratory QC data

Example 5:

- Laboratory result for chlorpyrifos in tomato = 0.40 mg/kg
- Stated purity of chlorpyrifos calibration material used to prepare the spiking solution = $95 \pm 2\%$ (certificate of analysis)
- Fourteen recoveries (%) recorded for in-batch QC samples spiked at 0.5 mg/kg chlorpyrifos over the past 3 months; 90, 100, 87, 89, 91, 79, 75, 65, 80, 82, 115, 110, 65, 73 provided a mean recovery of 86 % and a relative standard deviation of 15 %.

Assuming the uncertainty stated for the reference material to be an expanded uncertainty U (95% confidence range),

$$u'(C_{\text{ref}}) = \frac{2}{2} = 1\%$$

Note:

5. This assumes that the uncertainties associated with the preparation of the spiking solution and the spiking of the tomatoes are both insignificant. This is likely to be the case, but, if not, $u'(C_{\text{ref}})$ will nevertheless still be only a very minor contribution to the overall uncertainty.

$u'(R_w) = 15\%$ (relative intra-lab reproducibility standard deviation).

Using Equation 4, and taking bias to be 100 - % recovery,

$$\text{RMS}'_{\text{bias}} = 20\%$$

From Equation 3,

$$u'(\text{bias}) = 20\%$$

From Equation 2,

$$u' = 25\%$$

From Equation 1,

$$U' = 50\%$$

The laboratory could report the result as $0.40 \pm 0.20 \text{ mg/kg}$.

Note:

6. This uncertainty would apply to results not corrected for recovery. If, at the end of the analytical program, the results were corrected for the average recovery achieved over the 3 month period of analysis, then $u'(\text{bias})$ need only reflect the uncertainty associated with the mean recovery. Then $u'(\text{bias})$ may be calculated as the relative standard uncertainty of the recovery factor applied (the relative uncertainty of the mean recovery) combined with the relative standard uncertainty of the spike concentration, $u'(C_{\text{ref}})$.

Relative Standard Uncertainty of mean recovery,

$$u' \overline{\text{Re } c} = \frac{u'(R_w)}{\sqrt{n}}$$

Equation 6

where

n = the number of replicates from which the mean recovery is calculated.

$$u' \overline{\text{Re } c} = \frac{15}{\sqrt{14}} = 4\%$$

$$u'(\text{bias}) = \sqrt{u'(\overline{\text{Re } c})^2 + u'(C_{\text{ref}})^2} \quad \text{Equation 7}$$

$$\text{thus } u'(\text{bias}) = \sqrt{(4)^2 + (1)^2} = 4.1\%$$

Then, from Equation 2 and 1, using the $u'(R_w)$ value of 15% calculated previously

$$u' = 15.5\% \text{ and}$$

$$U' = 31\%$$

If results were corrected for recovery, the result should be reported as

$$0.40 \pm 0.12 \text{ mg/kg}$$

Note:

7. This example shows that if results are corrected for a mean recovery based on nine or more replicate recovery experiments conducted during the course of an analytical program, using a reference material for which the purity is known with a high level of certainty, a reasonable estimate of measurement uncertainty may be calculated from solely the intra-lab reproducibility standard deviation.

CCPR Priority Lists of Pesticides

Table 1: Schedule

2012 JMPR NEW COMPOUND EVALUATIONS				
TOXICOLOGY	RESIDUE	Prioritisation Criteria	Commodities	Residue trials provided
ametoctradin [BASF] – USA PRIORITY 1	ametoctradin -	Registered MRLS > LOQ	potato, cucumber, zucchini, melon, tomato, peppers, table and wine grapes, lettuce and lamb's lettuce, brassica vegetables, bulb vegetables and hops	Tomato (20), Pepper (10), Cucumber (8), Squash (10), Melon (8), Head lettuce (8), Leaf lettuce (9), Spinach (8), Grapes (13), Potatoes (21), Bulb onions (10), Spring Onion (5), Broccoli (10), Cabbage (10), Mustard greens (7), Celery (9), Hops (5)
chlorfenapyr [BASF] – Brazil moved to 2012 on request	chlorfenapyr [BASF] - Brazil	Registered MRLS > LOQ	citrus fruits, papaya, peppers, tomato, garlic, eggplant, onion, melon, tea and potato	Potato (8 trials LA), Tomato (8 trials LA), Red Pepper (8 trials LA), Citrus (16 trials LA+ 2 PF trials LA), Melons (8 trials LA), Papaya (5 trials LA), Eggplant (4 trials LA), Onion (8 trials LA), Garlic (5 trials LA), and Tea (6 trials)
dinotefuran [Mitsui Chemicals Agro] – Japan PRIORITY 1	dinotefuran	Registered MRLs > LOQ	apple, cabbage, chinese cabbage, citrus, cotton seeds, cruciferous vegetables, cucurbits, eggplant, grape, green soybeans, lettuce, mango, melon, okra, peach, pear, persimmon, potato, rice, soy bean, spinach, sweet peppers, tea, tomato, meat from mammals (other than marine mammals), edible offals (mammalian), milks, cranberry (USA)	Rice (6 reports), tomato and cherry tomato (4 reports), cucumber (3), eggplant (3), green pepper and chilli (5), okura (1), cabbage (2), chinese cabbage (1), shungiku (1), komatsuna (10), mizuna (1), pachoy (1), radish (3), turnip (1), carrot (2), melon (2), citrus-natsumikan (2), citrus-kabosa-sudachi (2), citrus-unshu orange (2), persimmon (2), peach (1), biwa (1), mango (1), nectarin (2), pear (2), apple (2), plum (3), grape (3), strawberry (1), cherry (3), kiwi fruit (1), water melon (1), welsh onion (3), lettuce-head and leaf (4), tea (2), sugar beet (1), broccoli and stem (2), celery (1), spinach (1), shungiku (1), green peas (1), soy bean (1), green soy bean (2), rakkyo (1), kuwai (1), pumpkin (1), potato, (1), wasabi (1), basil (1), chinese nira (1), asparagus (1) Cranberry (5)
fluxapyroxad [BASF] – USA PRIORITY 1	fluxapyroxad	Not registered Expected US registration 4/12	cereals (barley, corn, rice, sorghum and wheat), oilseeds (canola, sunflower, and cottonseed), root and tuber vegetables (potato, carrot, sugar beet), legume vegetables (dry and succulent peas, beans and soybean), Brassica stem and leafy vegetables (broccoli, cauliflower, cabbage), fruiting vegetables (peppers, tomatoes), pome fruit (apple and pear), citrus (orange, grapefruit, lemon), stone fruits (cherry, peach, plum), cucurbits (cucumber, melon, pumpkin, squash), bulb vegetables (onion, garlic), coffee, banana, grapes, mango, papaya and peanuts.	Potato (21, US/CA, + 2 Proc), sugar beet root (12, US/CA, + 2 Proc*), pea (13, US/CA), bean (11, US/CA), soybean (15, US/CA, + 4 Proc), tomato (20, US/CA, + 4 Proc), pepper (10, US/CA), apple (14, US/CA, + 2 Proc), pear (10, US/CA), cherry (6, US), peach (12, US/CA), plum (10, US/CA, + 2Proc), field corn (15x, US/CA, + 2 Proc), sweet corn (6, US/CA,), barley (12, US/CA, + 4 Proc), wheat (25, US/CA, + 4 Proc), sorghum (9, US, + 2 Proc), rice (12, US/CA, + 2 Proc), canola (16, US/CA, + 2 Proc), sunflower (8, US/CA, + 2 Proc), peanuts (12, US/CA, + 2 Proc), cotton (12, US/CA, + 2 Proc), lettuce (as follow crop, 5, Europe), cauliflower (as follow crop, 3, Europe), broccoli (as follow crop 1, Europe), carrot (as follow crop, 4) <i>* processing study</i> <i>additional trials with less critical GAP:</i> <i>barley (32 EU, 4 BR, 4 AUS), wheat (12 EU, 4 BR, 4 AUS), Triticale (4 EU), oat (4 BR), field corn (4 BR), soybean (4 BR)</i>

MCPA [Nufarm] – USA PRIORITY 1 – moved on request from 2011	MCPA	Registered MRLs > LOQ	Wheat grain, barley grain, peas, corn	Barley grain (49), Barley forage (11), Barley straw (50), Barley hay (36), Wheat grain (54), Wheat forage (75), Wheat straw (76), Wheat hay (66), Wheat processing (2), Corn (field) grain (24), Corn forage (24), Corn stover (24), Peas with pods (4), Peas without pods (5), Peas, dry (8), Pea forage (8), Pea hay (8), Flax seed (22), Grass forage (26), Grass hay (14)
picoxystrobin – [Dupont] -USA	picoxystrobin	Registered MRLs > LOQ	cereal grains (wheat, barley, oats, triticale, rye), oilseed (rapeseed), soybean and tomato, canola, maize (sweet, field), and pulses.	Canola (2), Cereals (Barley, Oats, Rye, Triticale, Wheat) (38), Cereals (Barley, Triticale, Wheat) (10), Cereals (Barley, Wheat (47), Cereals (Barley, Wheat) (6), Field Corn (16), Oilseed Rape (13), Oilseed Rape (18), Pulses (chick peas, lentils, dry beans) (22), Soybean (30), Sweet Corn (11)
sedaxane – [Syngenta] – USA	sedaxane	US, Argentina, France registration December 2011	Wheat, barley, oats, triticale, soybean, and canola	wheat grain (67), wheat forage (67), wheat hay (36), wheat straw (67), oat grain (8), oat forage (4), oat straw (4), barley grain (36), barley hay (26), barley forage (4), barley straw (4), canola seed (24)

2012 JMPR FOLLOW-UP EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided
	buprofezin (173) [Nihon Nohyaku] USA	coffee (USA), tea (Japan)	Coffee (6), Tea (6)
	captan (7) [Arysta] -	Pesticide Initiative Project - mango	Await further advice
	carbofuran (96) [FMC]	banana	Await further advice
	chlorpyrifos-methyl (090) [Dow AgroSciences]	Alternative GAP for cereal commodities (wheat, barley, oat, sorghum, wheat germ, wheat bran – unprocessed – excluding maize) Egypt – potato	<u>Cereal commodities (wheat, barley, oat, sorghum) (24)</u>
	Chlorothalonil (4 year rule)	Banana (Brazil)	
	cyfluthrin (157) - [Bayer CropScience]	soybean, cabbage	Soybean (20 trials + 1 processing trial) Cabbage (confirmation required)
	cyproconazole (239)	Coffee (Brazil)	Coffee (10)
	cyromazine (169) [Syngenta]	Pesticide Initiative Project – beans with pods	Await further advice
	<u>2,4-D (020)</u> [Dow AgroSciences]	<u>New GAP for soya bean</u>	<u>Soya bean (24)</u>
	dithiocarbamates - mancozeb (105) [Dow AgroSciences]	Pesticide Initiative Project – mango, okra, papaya mandarin (ROK)	<u>Number of trials for mango, okra, and papaya being developed by COLEACP PIP.</u> <u>await advice</u>
fenbuconazole (197) – ARfD – Dow AgroSciences			Await further advice
	fludioxonil (211) [Syngenta]	mango	Mango (8),

	flupyram (243) [Bayer CropScience]	Banana, almonds, pecans, apples, pears, peanuts, strawberries, potato, carrots	
	imidacloprid (206) [Bayer CropScience]	Pesticide Initiative Project - mango	Await further advice
	methoxyfenozide (209) [Dow AgroSciences]	New GAP for on spinach; alfalfa forage; alfalfa fodder; citrus fruits Pesticide Initiative Project – beans with pods Cucurbit vegetables: cucumber, Summer squash, melon (USA)	Spinach (8); alfalfa forage (9); alfalfa fodder (9); citrus fruits (20) Number of trials for beans with pod being developed by COLEACP PIP. cantaloupe (7 trials); cucumber (8 trials); summer squash (6 trials) (USA)
	oxamyl (126) [DuPont] –	residue definitions, methods	
	phorate (112) [AMVAC]	potato – awaiting confirmation	Await further advice
	spinetoram (233) [Dow AgroSciences]	New GAP for stone fruits; cabbage, head; broccoli; citrus fruits; grapes; dried grapes; onion, bulb; leafy vegetables; broad bean; tree nuts, blueberries; raspberries, red and black; onions, green	Stone fruits (21); cabbage, head (13); broccoli (11); citrus fruits (17); grapes (14); dried grapes (1); onion, bulb (10); leafy vegetables (21); broad bean (8); tree nuts (12); blueberries (6); raspberries, red and black (6); onions, green (6)
	thiacloprid (223) [Bayer CropScience]	Pesticide Initiative Project – beans with pods, papaya	Await further advice
	thiamethoxam (245)	papaya	
	trifloxystrobin (213) [Bayer CropScience]	Pesticide Initiative Project – beans with pods, mango, papaya, passionfruit	strawberry (21 residue trials), lettuce head (8 trials), Olive (12 trials) and aubergine (6 trials).

2012 JMPR PERIODIC RE-EVALUATION

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided
bentazone (172) (BASF) (residues - 2013)			
	cycloxydim (179) [BASF] -	Beans (green and dried), brassicae, carrot, grape, leek, lettuce (head and leafy), peas (fresh and dried), potato, rapeseed, strawberry, sugarbeet (all existing commodity CXLs appear to be supported)	Pome fruit (4), stone fruit (5), grapes (16), strawberries (16), potatoes (18), carrots (15), celeriac (8), onions (19), tomatoes (16), peppers (8), cauliflower (12), brussels sprouts (12), head cabbage (13), curly kale/chinese cabbage (8), head lettuce (21), spinach (8), green beans (15), green peas (23), leek (15), sugar beet roots (18), sugar beet tops (16), dry beans (21), dry peas (22), oilseed rape (12), sunflower (19), soybean (13), rice grain (11) rice straw (8), maize grain (7), maize silage (10), maize straw (10), food of animal origin (liver, kidney, meat, fat, milk, eggs) (2)

	dichlorvos (025) [AMVAC Chemical UK]	cattle (fat, meat, meat byproducts), egg, goat (fat, meat, meat byproducts), horse (fat, meat, meat byproducts), milk, mushroom, poultry (fat, meat, meat byproducts), raw agricultural commodities, nonperishable, bulk stored regardless of fat content, postharvest, raw agricultural commodities nonperishable, packaged or bagged, containing 6 percent fat or less, postharvest, raw agricultural commodities, nonperishable, packaged or bagged, containing more than 6 percent fat, postharvest, sheep (fat, meat, meat byproducts), tomato (all existing commodity CXLs appear to be supported) (support for some new commodities)	Await further advice
fenvalerate (119)	fenvalerate (119)	No longer supported by the manufacturer - Sumitomo Chemical National reviews will be provided by USA, Thailand to provide residue trial data awaiting advice on commodities	Await further advice
glufosinate-ammonium (175) [Bayer CropScience]	glufosinate-ammonium (175)	citrus fruits, tree nuts, almonds hulls, pome fruits, stone fruits, berries and other small fruits (except currants), currants (black, red, white), banana, assorted tropical and sub-tropical fruits - inedible peel, potato, carrot, bulb onion, corn salad, common bean (pods and/or immature seeds), asparagus, broad bean (dry), common bean (dry), peas (dry), rape seed and crude rape seed oil, crude, soya bean (dry), sunflower seed and crude sunflower seed oil, maize grain, maize fodder, sugar beet, tea, palm oil, meat (from mammals other than marine mammals), poultry meat, edible offal (mammalian), edible offal of poultry, eggs, milks. (all existing commodity CXLs appear to be supported)	citrus fruits (46), tree nuts (39), almonds hulls, pome fruits (44), stone fruits (69), berries and other small fruits (except currants) (62), currants (black, red, white) (12), banana (34), assorted tropical and sub-tropical fruits - inedible peel (34), potato (62), carrot (17), bulb onion (20), corn salad (4), head lettuce (38), common bean (pods and/or immature seeds) (16), asparagus (6), broad bean (dry) (7), common bean (dry) (16), peas (dry), olive (8) rape seed and crude rape seed oil, crude (35), soya bean (dry) (67), sunflower seed and crude sunflower seed oil (9), cotton (16), maize grain (58), maize fodder, rice (35), sugar beet (42), coffee (7), palm oil, meat (from mammals other than marine mammals), poultry meat, edible offal (mammalian), edible offal of poultry, eggs, milks.

2013 JMPR NEW COMPOUND EVALUATIONS

TOXICOLOGY	RESIDUE	Prioritisation Criteria	Commodities	Residue trials provided
bixafen [Bayer CropScience] Germany	Bixafen	Registered MRLs > LOQ	Cereal grains, rape seed, rape seed oil; meat from mammals and poultry, milk and eggs	Cereals (48), oilseed rape (22)
cyantraniliprole [Dupont] – USA PRIORITY 1	cyantraniliprole	Not registered	pome fruit, stone fruit, brassica vegetables, cucurbit vegetables, fruiting vegetables, leafy vegetables, bulb vegetables, green/long beans, grape, potato, sweet potato, rice, cotton, canola, citrus, tree nuts	pome fruit (59+), stone fruit (51+), brassica vegetables (50+), cucurbit vegetables (146+), fruiting vegetables (192+), leafy vegetables (80+), bulb vegetables (85), green/long beans (18), grape (33), potato (46), rice (9), cotton (22+), canola (29), citrus (52), tree nuts (12)
fluensulfone	fluensulfone	Not registered	Further advice required	
imazapic BASF Brazil priority 1 – moved from 2012	Imazapic	Registered MRLs mostly at LOQ	Peanut, sugarcane, rice, maize and soybean, animal feed items	Soybean (14 BR + 5 BR Proc), corn (4 BR), rice (4 BR)

imazapyr BASF Brazil priority 1 – moved from 2012	Imazapyr	Registered MRLs mostly at LOQ	Soybean, sunflower, rice, corn, sugarcane, canola, animal feed items	Soybean (18 BR + 8 BR Proc), corn (4 BR), rice (4 BR)
isoxaflutole [Bayer CropScience] Germany	Isoxaflutole	Registered MRLs mostly at LOQ	Maize, maize fodder and forage, soybean (dry), soybean oil, sugarcane, meat from mammals and poultry, milk and eggs	Maize (61), Soybean (31), sugarcane (25)
mesotrione – [Syngenta] - USA	Mesotrione	Registered MRLs some at LOQ	Asparagus, berries, Corn (grain, pop, sweet), Cranberry, Millet, Lingonberry, Oat (grain), Rhubarb, Sorghum (grain), Soybean, Sugarcane, Okra	Asparagus (8), Berries (10), Sweet Corn (12), Field Corn (20), Cranberry (5), Millet (5), Oats (16), Okra (5) Rhubarb (4), Grain Sorghum (12), Soybean (20), Sugarcane (8)
pymetrozine – [Syngenta] - USA	Pymetrozine	Registered MRLs > LOQ	Hops; vegetables (tuberous and corm); asparagus; vegetable (leafy, except <i>Brassica</i>); <i>Brassica</i> (head and Stem); <i>Brassica</i> (leafy greens); fruiting vegetables; cucurbit vegetables; cottonseed; pecans	Cucurbits Vegetables Group (19), Fruiting Vegetables Group, Including Processed Tomato Fraction (17), Crop Group 9: Cucurbit Vegetables (3), Crop Group 8: Fruiting Vegetables, Including Processed Tomato Fractions (22), Crop Subgroup 1C: Tuberous and Corm Vegetables (16), Cotton (14), Crop 5: Brassica (Cole) Leafy Vegetables (17), Magnitude of the Residues in or on Crop 4: Leafy Vegetables (24), Magnitude of the Residues in or on Hops (3), Crop Subgroup 1C: Tuberous and Corm Vegetables (16), Crop Group 8: Fruiting Vegetables (21), Pecans (5), Cotton (2), Crop Group 9: Cucurbit Vegetables (19), Asparagus (8), Potato as the Representative Commodity of Crop Subgroup 1C: Tuberous and Corm Vegetables (16)
tolfenpyrad [Nihon Nohyaku] Japan	Tolfenpyrad	Registered in Japan, the Dominican Republic, Thailand, Taiwan, UAE, Indonesia, Sadi Arabia, China, Malaysia and Jordan	Almonds, pecans, grape (table), raisin, juice (if MRL not included under table grape), plum, peach, cherry, pear, lemon, grapefruits, oranges, cantaloupe, cucumbers, summer squash, peppers, tomatoes, cauliflower, potatoes, cotton seed, tea and corresponding animal commodity MRLs.	almond (5), pecan (5), grape (12), cherries (6), peach (9), plum (6), prune (2), pear (6), orange (12), grapefruit (6), lemon(5), cucumber (6), cantaloupe (6), squash (5), tomato (12), pepper (bell+chili) (6+3), cauliflower (6), potato (16), cottonseed (12), tea (4)
triflumizole [Nippon Soda] USA	Triflumizole	Registered MRLs > LOQ	Pome fruits, stone fruits, grape, star apple, American persimmon, mangoes, papaya, pineapple, strawberries, cucurbits, squash, melons, leafy brassica, head and stem brassica, kohlrabi, lettuce, cress, land cress, spinach, purslane, beet leaves, chervil parsley, hazelnuts, hops and animal commodities	Pome fruits (38, P5), stone fruits, grape (25, P14), papaya (4), pineapple (3), strawberries (8), cucumber (5), squash (5), melons (6), cabbage (9), mustard green (10), swiss chard (3), lettuce (17), broccoli (10), hops (3) and animal commodities (feeding goat, poultry) P = processing data
trinexapac – [Syngenta] - USA	Trinexapac	Registered MRLs > LOQ	Wheat, Barley, Oats, Sugarcane	Wheat (20), Barley (12), grasses grown for seed (12), Sugarcane (8)
SYN545192 [Syngenta] - Switzerland	SYN545192	Not registered	Wheat, barley, soybean, corn, coffee, pome fruit, grape, sugarcane	Wheat (44-46), barley (44-46), soybean (28), corn (28), coffee (12), pome fruit (16), grape (16) and sugarcane (12).

2013 JMPR FOLLOW-UP EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided
	azoxystrobin [Syngenta] USA (229)	Potato (USA), coffee	Potato (5), coffee (7)
	cyprodinil (207) [Syngenta] USA	Apple, Pear, Pistachio, Almond, Pecan	Apple and Pear (18), Pistachio (3), Almond and Pecan (10)
	difenoconazole (224) [Syngenta] USA,	Grape, raisin, citrus, <i>Brassica</i> (broccoli, Brussels sprouts, cabbage, etc.), bulb vegetables, fruiting vegetables (pepper), cucurbits, potato]	Cantaloupe, Cucumber and Summer Squash as Representative Commodities of Vegetable, Cucurbit, Group 9 (17), Tomato and Pepper as Representative Commodities of Vegetable, Fruiting, Group 8 (20), Onions, Green and Dry Bulb, as Representative Commodities of Vegetable, Bulb, Group 3 (11), Broccoli, Cabbage, and Mustard Greens, as Representative Commodities of Brassica (Cole) Leafy Vegetables, Subgroups 5A and 5B (17), Fruit, Citrus, Group 10 (23), Grapes (12), Potato (5)
	<u>fenbuconazole (197) [Dow AgroSciences]</u>	<u>blueberries: new GAP for citrus fruits</u>	<u>Blueberries (8); citrus fruits (30)</u>
	fenpyroximate (193) [Nihon Nohyaku] - USA	Avocado, bean (snap), cucumber, potato, stone fruit (cherry, peach, plum), tea strawberry	Avocado (5), Bean, snap (8), Cucumber (9), Potato (16), Cherry (8), Peach (10), Plum (6), Strawberry (8)
	fludioxonil (211) [Syngenta] - USA	Tomato, Potato, Pineapple	Tomato (6, Potato (5), Pineapple (4)
	flutolanil (205) [Nihon Nohyaku]	leafy brassica, root vegetables, ginseng	Await further advice

	<p>chlorantraniliprole (230) [Dupont] - USA</p>	<p>Artichoke, globe Berries and other Small Fruits: blueberries, bearberries, bilberries, blackberries, boysenberries, cloudberries, cranberries, currants, dewberries, elderberries, gooseberries, grapes, huckleberries, juneberries, loganberries, mulberries, raspberries, rose hips, service berries and strawberries Citrus: calamondin, citrus citron, citrus hybrids (includes chironja, tangelo, tangor), grapefruit, kumquat, lemon, lime, mandarin (tangerine), sour orange, sweet orange, pummelo, and Satsuma mandarin Coffee Fruiting vegetables (other than cucurbits, except mushrooms and sweet corn) Hops Legume vegetables - bean (<i>Phaseolus</i> spp.; podded and shelled); broad bean (<i>Vicia faba</i> spp; podded and shelled), bean (<i>Vigna</i> spp.; podded and shelled); jackbean; pea (<i>Pisum</i> spp.; podded and shelled); pigeon pea; soybean (immature seed); sword bean Oilseeds - borage, castor oil plant, Chinese tallowtree, cottonseed, crambe, cuphea, echium, euphorbia, evening primrose, flax seed, Gold of Pleasure, hare's-ear mustard, jojoba, lesquerella, lunaria, meadow foam, milkweed, mustard seed, Niger seed, oil radish, poppy seed, rapeseed (including canola), rose hip, safflower, sesame, stokes aster, sunflower, sweet rocket, tallowwood, tea oil plant, vernonia Rice 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 Soybean, dried</p>	<p>Artichokes (4), Blueberry (11), Carrots (18), coffee (8), Cranberry (6), Canola (6) and Sunflowers (6), succulent peas - Shelled (6); edible-podded (7), snap beans (9), green peas, processing peas, sugar snap peas, snow peas and beans (7), radishes (6), rice (27), dried soybean (16), Strawberries (8+8 [different GAP]), hops (4), Green onion (5), Welsh onion (2), Scallion (1)</p> <p>May be removed, assuming the JMPR recommendation is approved by CCPR: citrus commodities (8), citrus and citrus juice processed from citrus fruit (2) Fruiting and Leafy Vegetables (20)</p>
	<p>malathion (49) [Cheminova] - USA</p>	<p>Cherry</p>	<p>6 trials with sweet cherries (3 57% EC and 3 ULV) and 6 trials with tart cherries (3 57% EC and 3 ULV)</p>
	<p>mandipropamid (231) [Syngenta] - USA</p>	<p>hops</p>	<p>Hops (11)</p>
	<p>propiconazole (160) [Syngenta] - USA</p>	<p>Oranges, grapefruit, lemon, peaches, nectarines, plum, tomato, cherry, strawberry, tree nuts not supported</p>	<p>Cherry (all stone fruits to get group tolerance) (6), Strawberry (8), Tree nuts (almond) (5), Pecan (8), Cherry (postharvest) (3), Tomato (postharvest) (6), Citrus (postharvest) (12), Stone fruit (postharvest) (9)</p>
	<p>spirotetramate(234) [Bayer CropScience] – USA</p>	<p>Cranberry</p>	<p>Cranberry (6)</p>
	<p>triaziphos (143)</p>	<p>Rice (China)</p>	

2013 JMPR PERIODIC RE-EVALUATION

TOXICOLOGY	RESIDUE	Commodities	comments
	aldicarb (117) [Bayer CropScience]	No longer supported by the manufacturer	No longer supported by the manufacturer Confirmation of support is required
amitraz (122) – [Arysta Lifesciences]	amitraz (122)	awaiting advice on commodities	Await further advice
	bentazone (172) (BASF) (toxicology – 2012)	beans (green and dried), peas (green and dried), cereals, maize, sorghum, onion, peanuts, potato, linseed, meat, milk, eggs., soybean	Await further advice
dichlofluanid (82) – [Bayer CropScience]	dichlofluanid (82)		not supported by manufacturer Confirmation of support is required
dinocap (87)	dinocap (87)	not supported by manufacturer [Dow AgroSciences]	not supported by manufacturer Confirmation of support is required
diquat (031) [Syngenta] priority 1 - moved on request March 2011	diquat (031) [Syngenta]	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.	Oil seeds (17 Oilseed rape, 13 soya bean, 14 sunflower), Legume vegetable group (21 peas, 11 beans, 42 pulses), Fruiting vegetable group (including 6 tomato), Root and tuber group (including 12 carrot, 34 potato + 2 potato processing studies), 4 apple, 8 banana, 12 coffee, 6 strawberry. (does not appear to be support for existing commodity CXLs for alfalfa fodder, cereals, edible offal, meat mammalian, milk poultry)
disulfoton (74) – [Bayer CropScience]	disulfoton (74)	awaiting advice on commodities	support from USA Confirmation of support is required
	dithianon (028) [BASF] priority 1 moved from 2012	pome fruit, cherry, grapes, hops, mandarin persimmon (ROK)	Await further advice
fenbutatin oxide (109) [BASF] Defer re-evaluation by 1 year if possible since supporting residue trials are in progress	fenbutatin oxide (109)	Tree nuts, pome fruit, banana, cherry, citrus fruit, cucumber, grapes, raisins, stone fruit, strawberry, tomato, meat, milk, eggs	apple (8), citrus (16), strawberry (8) (does not appear to be support for existing commodity CXLs for almond, banana, cherry, poultry, mammalian meat, cucumber, grapes, milks, peach, pecan, plum, prunes, raisins, tomato, walnut)

fenpropathrin (185) [Sumitomo Chemical] – USA priority 1 – moved from 2012	fenpropathrin (185)	cattle meat, cattle milk, cattle edible offal, cotton seed, cotton seed oil, eggplant, eggs, gherkin, grapes, chilli pepper, sweet pepper, pome fruits, poultry meat, poultry edible offal, tea, tomato, Cherries, Stone fruit (Peach, Apricots, Nectarine, Plums), Strawberries, Bushberries, Caneberries, Tree nuts including pistachio, Olive, Citrus (Oranges, Grapefruit, Lemons) Sweet cherry (USA)	Cotton seed (33), Cucumber (8), Squash (7), Grapes (20), Peppers (10), Apples (26), Tea (3), Tomato (8), Cherries (6), Peach (10), Plums (6), Strawberries (10), Caneberries (7), TreeNuts (10), Olives (3), Oranges (18), Grapefruit (7), Lemons(6) (does not appear to be support for existing commodity CXLs for poultry, mammalian meat, milks) (appears to be support for new commodities such as strawberry, cucumber, citrus and tree nuts)
metalaxyl (138) Quimicas del Vallés - SCC GmbH	metalaxyl (138)	Review in 2004 for residues was for evaluation of metalaxyl-M, Support from Quimicas del Vallés - SCC GmbH, USA - Supervised trials by Thailand	NOTE – new supporting manufacturer That Thailand has agreed to provide field trials.
methidathion (51) [Syngenta]	methidathion (51)		not supported by manufacturer Confirmation of support is required
triforine (116) [Sumitomo Corp]	triforine (116)	Apple, Blueberries, Brussels sprouts, Cereal grains, Cherries, Common bean, Currants(Black,Rd, White), Fruiting vegetables, Cucurbits, Gooseberry, Peach, Plums(including prunes), Strawberry, Tomato	Await further advice

2014 JMPR - NEW COMPOUND EVALUATIONS

TOXICOLOGY	RESIDUE	Prioritisation Criteria	Commodities	Residue trials provided
dichlobenil – [Chemtura] USA	dichlobenil	Registered MRLs > LOQ	Cranberry, blackberry, blueberry, raspberry, grapes, cherry, pome fruit, hazelnut, and rhubarb	Apple (5), Blueberry (2), Blackberry (3), Cherry (12), Cranberry (4), Filberts (3), Grapes (12), Peach (4), Plum (3)
fenamidone [Bayer CropScience] Germany priority 1 – moved from 2013	fenamidone	Registered MRLs > LOQ	Broccoli, Brussels sprouts, Carrots, Chinese cabbage, Cauliflower, Courgettes (Summer squash), Cucumber, Eggplant, Gherkin, Grapes (Table and wine), Head cabbage, Kale, Leek, Lettuce (Head and leafy), Melon, Onion, Pepper (Bell and sweet), Potato, Pumpkin (Winter squash), Spinach, Strawberries, Sunflower seeds, Tomato, Watermelon	Fruiting vegetables (75), Leafy vegetables (30), Bulb vegetables (12), Brassica vegetables (20), Potato and tuberous vegetables (34), Root vegetables (13), Berries and small fruit (34), Oilseeds (23)
flufenoxuron BASF Brazil priority 1 – moved from 2012	flufenoxuron	Registered MRLs > LOQ	Soybean, pomefruit (apple, pear), orange, melon, tomato, grape	Soybean (4 BR), pome-fruit (3), orange (1), melon, tomato (5), grape (14)
metrafenone [BASF] USA	metrafenone	Registered MRLs > LOQ	Grape (table, wine, raisin), Pome fruits (apple, pears), Cherries, Fruiting vegetables (tomatoes, peppers, eggplant), Cucurbits (cucumber, squash, melon), Cereals (wheat, barley, oats, rye, triticale), Hops	Grapes (table and wine) (24 US) (14 EU), Raisins (dried grapes), (1 US), Pome fruits (apples, pears) (18), Cherries (16), Fruiting vegetables (tomatoes, peppers, eggplant) (28), Cucurbits (cucumber, squash, cantaloupe) (32), Cereals (wheat, barley, oats rye, triticale) (67), Hops (6 EU) (5 US)
norfluzuron – [Syngenta] -USA	norfluzuron	Registered MRLs > LOQ	almond, apple, apricot, asparagus, avocado, blackberry, blueberry, cranberry, cherry (sweet and tart), citrus fruits group, cottonseed, grape, hazelnut, hops, nectarine, peach, peanut, pear, pecan, plums and prunes, raspberry, soybean, and walnut.	Almond: 7; Apple: 8; Apricot: 2; Asparagus: 6; Avocado: 3; Blackberry: 1; Blueberry: 6; Cranberry: 5; Cherry: 3; Citrus Fruits: 8; Cottonseed: 10; Filberts: 3; Grapes: 14; Nectarine: 2; Peach: 4; Peanut: 10; Pear: 4; Pecans: 4; Plums: 6; Raspberry: 6; Soybeans: 22; Walnuts: 2
rotenone (DDRK)	rotenone	registered	More advice required on relevant manufacturer and data package	

2014 JMPR - FOLLOW-UP EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided
	Bifenthrin (4 year rule)	Barley, barley (straw fodder), strawberry (alternative GAP)	
	Chlorothalonil (4 year rule)	Banana, carrot, cherry, cranberry, bulb onion, peach, sweet and chilli pepper, tomato,, common beans	
	phosmet [Gowan] - USA	cranberry, tart cherry	cranberry (5), tart cherry (15) - tart cherry- 5 pre-GLP trials (2 US, 3 Canada), 6 GLP (Italy), 4 GLP (France)

2014 JMPR - PERIODIC RE-EVALUATION

TOXICOLOGY	RESIDUE	Commodities	Comments
	azinphos-methyl (002) [Makhteshim – Agan]	awaiting advice on commodities	support unknown
bromide ion (47)	bromide ion (47)		no Croplife manufacturer responsible - support unknown
bromopropylate (70) [Syngenta]	bromopropylate (70)	No support No known registered uses	No support No known registered uses
myclobutanil (181) [Dow AgroSciences]	myclobutanil (181)	pome fruits, stone fruits, black currant, grapes, strawberry, banana, hops, tomato Pesticide Initiative Project – beans with pods jujube (ROK)	Awaiting advice Information on number of available trials is under development. await advice
penconazole (182) [Syngenta]	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, Zucchini), 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	
tecnazene (115)	tecnazene (115)		no Croplife manufacturer listed - support unknown

2015 JMPR - NEW COMPOUND EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2015 JMPR - FOLLOW-UP EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2015 JMPR - PERIODIC RE-EVALUATION

TOXICOLOGY	RESIDUE	Commodities	Comments
abamectin (177) [Syngenta]	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) [BASF]	chlormequat (15)	Cereals, cottonseed, maize, rapeseed, maize fodder, cereals fodder/straw, meat, milk, eggs	
clethodim (187) [Sumitomo - Valent USA] USA	clethodim (187)	bean, broccoli, cabbage, carrot, cranberry, cucurbits, hops, lettuce, pea, strawberry, blueberry	Blueberry (9) – awaiting further advice
ethephon (106) [Bayer CropScience]	ethephon (106)	Apple, Barley, Barley straw and fodder, Blueberries, Cantaloupe, Cherries, Chili peppers (dry), Cotton seed, Dried grapes, Figs, Grapes, Hazelnuts, Peppers, Pineapple, Rye, Rye straw and fodder, Tomato, Walnuts, Wheat, Wheat straw and fodder, Chicken eggs, Edible offal of cattle, goats, horses, pigs & sheep, Meat of cattle, goats, horses, pigs & sheep, Milk of cattle, goats & sheep, Poultry meat, Poultry, edible offal.	
fenpropimorph (188) [BASF]	fenpropimorph (188)	banana, cereals, sugar beet, cereals fodder/straw, meat, milk, eggs	
hydrogen phosphide (46)	hydrogen phosphide (46)		no Croplife manufacturer responsible - support unknown
phosalone (60) [Cheminova]	phosalone (60)	awaiting advice on commodities	support unknown
teflubenzuron (190) [BASF]	teflubenzuron (190)	apple, orange, coffee, field corn, soybean, sugarcane, sunflower, tomato, melon, broccoli, cauliflower, grape, papaya	Apple (12), orange (16), coffee (9), field corn (6), soybean (5), sugarcane (5), sunflower (8), tomato (12), melon (8), broccoli (8), cauliflower (8), grape (12), papaya (4), mango (4), cucumber (8), gherkin (4), sweet pepper (4)

2016 JMPR - NEW COMPOUND EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2016 JMPR - FOLLOW-UP EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2016 JMPR - PERIODIC RE-EVALUATION

TOXICOLOGY	RESIDUE	Commodities	Comments
bioresmethrin (93) – [Sumitomo Chemical]	bioresmethrin (93)		not supported by manufacturer
diazinon (22) [Makhteshim – Agan] -	diazinon (22)	awaiting advice on commodities	
iprodione (111) (BASF)	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) [FMC]	permethrin (120)		not supported by manufacturer
tolclofos-methyl (191) [Sumitomo Chemical]	tolclofos-methyl (191)	awaiting advice on commodities ginseng (ROK)	Await advice

2017 JMPR - NEW COMPOUND EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2017 JMPR - FOLLOW-UP EVALUATIONS

TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2017 JMPR - PERIODIC RE-EVALUATION			
TOXICOLOGY	RESIDUE	Commodities	Comments
fenarimol (192) [Gowan]	fenarimol	awaiting advice on commodities	
fenpyroximate (193) [Nihon Nohyaku]	fenpyroximate	awaiting advice on commodities	
fenthion (39) [Bayer CropScience]	fenthion	awaiting advice on commodities	
quintozene (64) [Crompton – AMVAC]	quintozene	awaiting advice on commodities	

2018 JMPR - NEW COMPOUND EVALUATIONS			
TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2018 JMPR - FOLLOW-UP EVALUATIONS			
TOXICOLOGY	RESIDUE	Commodities	Residue trials provided

2018 JMPR - PERIODIC RE-EVALUATION			
TOXICOLOGY	RESIDUE	Commodities	Residue trials provided
ferbam, ziram (105) [Taminco]	ferbam, ziram (105)	awaiting advice on commodities	
flumethrin (195) [Bayer CropScience]	flumethrin (195)	awaiting advice on commodities	

Table 2: Record of periodic re-evaluations (not required for CCPR report)

Table 3: Chemical-commodity combinations for which specific GAP is no longer supported (not required for CCPR report)

Table 4: Chemicals with extraneous MRLs and recent deletions (not required for CCPR report)

Table 5: Periodic re-evaluation - chemicals no longer supported

2012	comments
aldicarb (117) Bayer CropScience]	No longer supported by the manufacturer Confirmation of support is required
2013	comments
dichlofluanid (82) [Bayer CropScience]	not supported by manufacturer Confirmation of support is required
dinocap (87) [Dow AgroSciences]	not supported by manufacturer Confirmation of support is required
disulfoton (74) [Bayer CropScience]	support from USA - awaiting advice on commodities Confirmation of support is required
methidathion (51) [Syngenta]	not supported by manufacturer Confirmation of support is required

Table 6: Periodic re-evaluation – some commodities no longer supported

2012	Commodities	Residue trials provided
2013		
diquat (031) [Syngenta] priority 1 - moved on request March 2011	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.	Oil seeds (17 Oilseed rape, 13 soya bean, 14 sunflower), Legume vegetable group (21 peas, 11 beans, 42 pulses), Fruiting vegetable group (including 6 tomato), Root and tuber group (including 12 carrot, 34 potato + 2 potato processing studies), 4 apple, 8 banana, 12 coffee, 6 strawberry. (does not appear to be support for existing commodity CXLs for alfalfa fodder, cereals, edible offal, meat mammalian, milk poultry)
fenbutatin oxide (109) [BASF]	Tree nuts, pome fruit, banana, cherry, citrus fruit, cucumber, grapes, raisins, stone fruit, strawberry, tomato, meat, milk, eggs	apple (8), citrus (16), strawberry (8) (does not appear to be support for existing commodity CXLs for almond, banana, cherry, poultry, mammalian meat, cucumber, grapes, milks, peach, pecan, plum, prunes, raisins, tomato, walnut)
fenpropathrin (185) [Sumitomo Chemical] – USA priority 1 – moved from 2012	cattle meat, cattle milk, cattle edible offal, cotton seed, cotton seed oil, eggplant, eggs, gherkin, grapes, chilli pepper, sweet pepper, pome fruits, poultry meat, poultry edible offal, tea, tomato, Cherries, Stone fruit (Peach, Apricots, Nectarine, Plums), Strawberries, Bushberries, Caneberries, Tree nuts including pistachio, Olive, Citrus (Oranges, Grapefruit, Lemons) Sweet cherry (USA)	Cotton seed (33), Cucumber (8), Squash (7), Grapes (20), Peppers (10), Apples (26), Tea (3), Tomato (8), Cherries (6), Peach (10), Plums (6), Strawberries (10), Caneberries (7), TreeNuts (10), Olives (3), Oranges (18), Grapefruit (7), Lemons(6) (does not appear to be support for existing commodity CXLs for poultry, mammalian meat, milks) (appears to be support for new commodities such as strawberry, cucumber, citrus and tree nuts)
metalaxyl (138) Quimicas del Vallés - SCC GmbH	Review in 2004 for residues was for evaluation of metalaxyl-M, Support from Quimicas del Vallés - SCC GmbH, USA - Supervised trials by Thailand	NOTE – new supporting manufacturer That Thailand has agreed to provide field trials. Support for all existing commodity CXLs is unknown