CODEX ALIMENTARIUS COMMISSION E

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 5

CX/CF 15/9/5
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON CONTAMINANTS IN FOODS

9th Session

New Delhi, India, 16 – 20 March 2015

DRAFT AND PROPOSED DRAFT REVISION OF MAXIMUM LEVELS IN SELECTED COMMODITIES IN THE GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOOD AND FEED (CODEX STAN 193-1995)

(Prepared by the Electronic Working Group led by United States of America)

Codex Members and Observers wishing to submit comments at Step 3 on the proposed draft revision of MLs for lead in selected commodities in the GSCTFF (*refer to paragraph 44),* including possible implications for their economic interests, should do so in conformity with the *Uniform Procedure for the Elaboration of Codex Standards and Related Texts* (Codex Alimentarius Commission Procedural Manual) before **28 February 2015**. Comments should be directed:

to:	with a copy to:
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Note: Supporting information presented in paragraphs 1 through 43 is not subject to comments at Step 3. Codex Members and Observers are invited to take into account this information while commenting on the proposals put forward in paragraph 44.

BACKGROUND

1. The 6th session of the Committee on Contaminants in Foods (CCCF) (March 2012), agreed to establish an electronic Working Group (EWG) led by the United States of America to revise the maximum levels (MLs) for lead in fruit juices, milk and milk products, infant formula, canned fruits and vegetables, fruits, and cereal grains (except buckwheat, cañihua and quinoa) in the General Standard for Contaminants and Toxins in Food and Feed (GSCTFF). The Committee also agreed to consider consolidating the MLs for canned fruit and vegetable products.[1]

2. The 7th session of the CCCF[2] (April 2013) agreed to the following:

a. To retain the current MLs of 0.02 mg/kg for milks, 0.2 mg/kg for cereals, and 0.05 mg/kg for juices and nectars from berries and other small fruits, ready-to-drink.

b. To postpone consideration of the proposed draft ML of 0.01 mg/kg for infant formula to the 8th session of CCCF to allow time for interested countries to submit additional data for analysis, with the understanding that if no additional data were made available, the Committee would consider the proposed lower ML for adoption at the 8th session.

c. To advance a proposed draft ML of 0.03 mg/kg for fruit juices and nectars, ready-to-drink (excluding juices from berries and other small fruits); a proposed draft ML of 0.1 mg/kg for canned fruits, including canned mixed fruits (excluding canned berry and other small fruits); and a proposed draft ML of 0.1 mg/kg for canned vegetables, including canned mixed vegetables (excluding canned brassica vegetables, canned leafy vegetables and canned legume vegetables) to the 36th session of the Codex Alimentarius Commission for adoption at Step 5/8.

[1] REP12/CF, paras. 126-127.
[2] REP13/CF, paras. 41-21 and Appendix II

3. The 36th session of the Commission (July 2013) agreed to adopt the MLs for fruit juice and canned fruits and vegetables at Step 5, with the understanding that countries that had intervened to object to adoption at Step 5/8 commit to submit data to the GEMS/Food database[3] within a year, to allow CCCF to further consider the revision of the MLs in 2015 for submission to the 38th session of the Commission[4].

4. The 7th session of the CCCF also agreed to reestablish the EWG led by the United States of America to continue with the review of MLs for lead in fruits, vegetables, milk products and infant formula, follow-on formula and formula for special medical purposes for infants[5].

5. The 8th session of the CCCF agreed to the following[6]:

a. Maintain the current MLs in the GSCTFF for assorted (sub)tropical fruits, edible peel; assorted(sub)tropical fruits, inedible peel; citrus fruits; pome fruits; stone fruits; bulb vegetables; leafy vegetables; root and tuber vegetables; and secondary milk products.

b. Postpone discussion of the proposed ML of 0.1 mg/kg for berries and other small fruits until the 9th CCCF to allow interested countries to submit new or additional data to GEMS/Food for analysis on the understanding that if no data were made available, the Committee would accept the proposed lower ML for adoption at its 9th session. The Committee noted that the proposed lower ML of 0.1 mg/kg for berries and other small fruits may be acceptable when applied to the occurrence data of this group as a whole; however, when the data are split into the individual species or varieties of berries and small fruits, the proposed reduction may be problematic for some berries such as cranberries, currants, elderberries and strawberry tree.

c. Postpone discussion of the proposed MLs of 0.1 mg/kg for legume vegetables and brassica vegetables, and 0.05 mg/kg for fruiting vegetables, cucurbits, and fruiting vegetables, other than cucurbits[7], for further consideration in the EWG and finalisation by the 9th CCCF. The Committee noted several comments on the need to collect more occurrence data, in particular better distribution of data among regions.

6. The United States of America prepared the draft paper on proposed revised MLs for lead in fruit juice and nectars, canned fruits and vegetables, berries and small fruits, legume vegetables, brassica vegetables, fruiting vegetables (cucurbits) and fruiting vegetables (other than cucurbits) with the technical assistance of the Secretariat of the Food and Agriculture Organization (FAO)/World Health Organization (WHO) Joint Expert Committee on Food Additives (JECFA). The list of countries and nongovernmental organizations (NGOs) that joined the EWG can be found in Appendix II. Comments were received from the following countries/NGOs: Australia, Brazil, Canada, the European Union, Iran, Japan, New Zealand, the Republic of Korea, and the International Council of Beverages Associations (ICBA).

INTRODUCTION

7. As a reminder, this work was undertaken in response to the new toxicological evaluation of lead in food conducted by JECFA at its 73rd meeting, at the request of CCCF. In the evaluation[8], JECFA stated that exposure to lead is associated with a wide range of effects, including various neurodevelopmental effects, impaired renal function, hypertension, impaired fertility and adverse pregnancy outcomes. Because of the neurodevelopmental effects, foetuses, infants and children are the subgroups that are most sensitive to lead. JECFA withdrew the previously established provisional tolerable weekly intake (PTWI) of 25 μg/kg bw and concluded that it was not possible to establish a new PTWI that would be considered to be health protective. JECFA also concluded that, in populations with prolonged dietary exposures to higher levels of lead, measures should be taken to identify major contributing sources and foods and, if appropriate, to identify methods of reducing dietary exposure that are commensurate with the level of risk reduction.

8. Since no safe level of lead has been identified by JECFA, the focus of the paper was to review occurrence data to determine what percentage of samples can meet proposed new MLs. The paper did not propose MLs based on levels of exposure or on consumption. This approach is consistent with the approach presented previously[9], as well as with an "as low as reasonably achievable approach" (ALARA) to lead in food in international trade.

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[3] Global Environment Monitoring System-Food Contamination Monitoring and Assessment Programme, http://www.who.int/foodsafety/chem/gems/en
[4] REP13/CAC, para. 79.
[5] REP13/CF, paras. 39-40.
[6] REP14/CF, paras. 21-24.
[7] Excluding fungi and mushrooms.
[8] JECFA. Evaluation of Certain Food Additives and Contaminants. Seventy-third report of the Joint FAO/WHO Expert Committee on Food Additives. WHO Technical Report Series 960.
[9] CX/CF 12/6/13, CX/CF13/7/5, CX/CF 14/8/5

WORK PROCESS

9. The United States of America and the Codex Secretariat requested that Codex countries, observers, and EWG members submit data on lead levels in fruit juices and nectars, ready-to-drink; canned fruits and canned vegetables; berries and other small fruits; brassica vegetables; fruiting vegetables, cucurbits; fruiting vegetables, other than cucurbits; and legume vegetables, preferably from the past 10 years, to the WHO GEMS/Food database. The collection, organization, and initial categorization of data were performed by the JECFA Secretariat, in consultation with the EWG, and based on the GEMS/Food database. Analysis of results and decisions about which data were excluded, how data should be presented, and what recommendations should be included were made by the EWG.

10. For fruit juices and nectars and canned fruits and vegetables, we re-extracted data from the GEMS/Food database covering approximately the last 15 years. For non-canned fruits and vegetables, we extracted data submitted since the extraction for last year's report, and combined the new data with the dataset used in last year's report. The first step in analysis of the data was to remove data from the initial extractions that did not meet basic criteria. For example, for non-canned fruits and vegetables, we included unprocessed foods, and removed processed foods such as canned goods, jams, and compotes. This process left us with our raw dataset.

11. The second step was to prepare a second dataset based on the limit of quantitation (LOQ) of the analytical method associated with each sample (LOQ-limited dataset). We found that many results in the raw dataset were obtained with methods with a reported LOQ higher than the Codex ML for that food. Further, some of these samples had results reported as nondetects (NDs). NDs obtained with a method with an LOQ higher than the ML may actually be higher than the ML. Furthermore, methods with an LOQ higher than the ML cannot accurately determine whether a food meets the ML. Therefore, for each food category, we prepared a second dataset excluding all results obtained with a method with an LOQ higher than the ML. We also excluded samples that were entered in the GEMS database without an LOQ, as we could not evaluate whether these samples met the LOQ criteria. Since we believe this dataset is more informative than the raw dataset, which includes results obtained with methods with LOQs higher than the ML, our conclusions are based primarily on the LOQ-limited dataset.

12. The final step in the analysis was to prepare tables showing the percentage of lead level results in the LOQ-limited dataset that meet the current and hypothetical lower MLs and to make recommendations based on those percentages. We attempted to choose a percentage value that would be consistent with current occurrence data and would provide some reduction in lead levels, but without having too significant an impact on international trade. There was no specific rule to identify the appropriate cut-off value, but in general, our approach has been to recommend reductions in MLs when the percentage of excluded samples was less than 5 percent.[10] In cases where the Committee had previously identified potential MLs for consideration and reanalysis (e.g., fruit juices), we focused on whether new data supported the previously identified MLs, rather than proposing new MLs. Both the raw and LOQ-limited datasets contained NDs, which were treated as zeros in the analysis. In exposure analyses, NDs may be replaced by such values as zero, or a value between zero and the limit of detection (LOD), to provide a more conservative indicator of exposure. In this project, we are not conducting an exposure analysis, but determining what percentage of samples can meet current or proposed new MLs. In this case, replacing NDs by a value between zero and the LOD would underestimate the ability of foods to meet the proposed MLs. Therefore, we replaced NDs with zeros.

ANALYSIS OF INDIVIDUAL FOODS

13. **Fruit juices and nectars, ready-to-drink (excluding juices from berries and other small fruits)**. The 2015 fruit juices and nectars raw dataset consisted of 4064 results from the GEMS/Food database for samples collected and/or analyzed between 1999 and 2014. The dataset includes mixed fruit juices, including mixed juices containing berries and other small fruits; mixed fruit and vegetable juices; and juices for infants. The dataset excludes juice drinks or juice cocktails containing less than 100 percent fruit juice (other than products specifically described as nectars); non-reconstituted juice concentrates; vegetable juices containing only vegetable juice; tomato juice; powdered/dehydrated juice products; teas; alcohol-containing drinks; and canned fruits. We also excluded 100 percent juice from berries and other small fruits, since the Committee excluded these juices from the proposed revised ML in 2013.

[10] CX/CF 12/6/13, CX/CF13/7/5, CX/CF 14/8/5. In addition, we note that the primary goal was not to attain identical achievability rates across all commodities.

14. Because the Committee agreed to the revised ML of 0.03 mg/kg in 2013, we prepared an LOQ-limited 2015 dataset excluding all results obtained with a method with an LOQ higher than the proposed draft ML of 0.03 mg/kg. We excluded 1205 samples with an LOQ > 0.03 mg/kg or no reported LOQ to obtain the LOQ-limited set of 2859 samples. Tables FJ-1 and FJ-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets, and Table FJ-3 shows the mean and maximum lead levels associated with both these datasets. Finally, Table FJ-4 shows the percentage of fruit juice and nectar samples meeting current and hypothetical MLs for the 2015 and 2013 LOQ-limited datasets.

15. For fruit juices, 97 percent of the samples in the 2015 LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.03 mg/kg) may meet the proposed (Step 5) Codex ML of 0.03 mg/kg (Table FJ-4). This table also indicates that 99 percent of samples met the current ML of 0.05 mg/kg, 98 percent may meet a hypothetical ML of 0.04 mg/kg, and 95 percent may meet a hypothetical ML of 0.02 mg/kg. Thus, lowering the ML to the proposed level of 0.03 mg/kg would eliminate approximately 3 percent of the fruit juice and nectar samples in international trade. Similar results (96 percent of samples meeting a hypothetical ML of 0.03 mg/kg) were reported in 2013 (Table FJ-4). Therefore, the EWG again recommends lowering the ML for lead in fruit juices and nectars, ready to drink, to 0.03 mg/kg.

16. Because of concerns raised at the Commission meeting in 2013, the EWG wanted to address the geographical representativeness of the new dataset. The results reported in 2013 were based on 3066 samples in the raw dataset (from Argentina, Australia, Canada, China, the European Union, Japan, New Zealand, Singapore, Thailand, and the United States of America) and 2703 samples in the LOQ-limited dataset (from Argentina, Australia, Canada, China, the European Union, Japan, New Zealand, Thailand, and the United States of America). This year's analysis includes data from the 2013 analysis and newly reported data, and consists of 4064 samples in the raw dataset (from Argentina, Australia, Austria, Belgium, Canada, China, Czech Republic, Finland, France, Germany, Greece, Hungary, India, Ireland, Italy/the European Food Safety Authority (EFSA), Japan, Lithuania, New Zealand, Poland, Romania, Singapore, Slovakia, Slovenia, Spain, Thailand, and the United States of America) and 2859 samples in the LOQ-limited set (from Argentina, Australia, Austria, Canada, China, Finland, France, Germany, Hungary, India, Italy/EFSA, Japan, New Zealand, Poland, Romania, Singapore, Slovakia, Spain, Thailand, and the United States of America).[11] Therefore, the 2015 LOQ-limited dataset includes data from two more non-European countries (India and Singapore) than the 2013 LOQ-limited dataset.[12]

17. We also note that 87 of 2859 samples (3%) in the 2015 LOQ-limited fruit juice and nectars dataset had results greater than 0.03 mg/kg, ranging in value from 0.031 mg/kg to 0.371 mg/kg. Table FJ-5 shows the number and percentage of each type of fruit juice or nectar in the LOQ-limited dataset, as well as the percentage of samples below 0.03 mg/kg for each type of juice or nectar. For specific juice types, the percentage of samples ≤ 0.03 mg/kg was 95 percent or greater (after rounding), except for mixed fruit and vegetable juice (91%), pear nectar (94%), pomegranate juice (74%), gac juice (0%), noni juice (0%), and quince juice (0%). The Committee may want to consider whether there is sufficient evidence to conclude that the recommended 0.03 mg/kg standard should be applied to all fruit juices and nectars. In this light, we note that there is only one sample each for gac, noni, and quince juices. A number of juices and nectars that met the standard (acai, acerola, cherry, honeydew, kiwi, prickly pear, pummelo, quince, and tamarind juices; grapefruit, passionfruit, pomegranate, and sour cherry nectars) also had one sample (Table FJ-5).

18. **Canned vegetables**. The 2015 canned vegetables raw dataset consisted of 698 results from the GEMS/Food database for samples collected and/or analyzed between 1997 and 2013. This dataset excludes canned brassica, leafy, and legume vegetables, as agreed in 2013, as well as canned pickled foods (cucumbers, ginger, pachranga) and canned processed tomato concentrates, because they are classified separately in the GSCTFF or Codex Classification of Foods and Animal Feeds[13]. Because the Committee agreed to revise the ML to 0.1 mg/kg in 2013, we prepared a 2015 LOQ-limited dataset excluding all results obtained with a method with an LOQ higher than 0.1 mg/kg. We excluded 87 samples with an LOQ > 0.1 mg/kg or no reported LOQ to obtain the LOQ-limited set of 611 samples. Tables CV-1 and CV-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets, and Table CV-3 shows the mean and maximum lead levels associated with both these datasets. Finally, Table CV-4 shows the percentage of canned vegetable samples meeting current and hypothetical MLs for the 2015 and 2013 LOQ-limited datasets.

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[11] In the 2013 paper, we reported samples with country name "Italy" as "European Union," because many of these samples were entered by the European Food Safety Authority (EFSA) in Italy. Thus, samples labelled "Italy" included results from European countries other than Italy. The 2015 dataset includes reports from individual European countries, as well as reports from Italy (or EFSA). Therefore, we switched from reporting entries from Italy as "European Union" to reporting them as "Italy/EFSA." Because the earlier dataset did not differentiate between individual European countries, we cannot tell whether more European countries are included in the 2015 dataset than in the 2013 dataset.

[12] The EWG notes that an LOQ limitation of 0.03 was applied in 2015, versus a limitation of 0.05 in 2013, which had the effect of lowering the number of samples in 2015 relative to 2013.

[13] CAC/MISC 4-1993

19. For canned vegetables, 99 percent of the samples in the LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.1 mg/kg) may meet the proposed (Step 5) Codex ML of 0.1 mg/kg (Table CV-4). This table also indicates that 98 percent of samples may meet a hypothetical ML of 0.075 mg/kg, and 96 percent of samples may meet a hypothetical ML of 0.05 mg/kg. Thus, lowering the ML to the hypothetical level of 0.1 mg/kg would eliminate approximately 1 percent of the samples in international trade, lowering the ML to the hypothetical level of 0.075 mg/kg would eliminate approximately 2 percent of the samples in international trade, and lowering the ML to the hypothetical level of 0.05 mg/kg would eliminate approximately 4 percent of the samples in international trade. Similar results were reported in 2013 (Table CV-4). Therefore, the EWG again recommends establishing an ML for lead in canned vegetables of 0.1 mg/kg, consistent with the recommendation sent to the Commission in 2013.

20. Because of concerns raised at the Commission meeting in 2013, the EWG wanted to address the geographical representativeness of the new dataset. The results reported in 2013 were based on 395 samples in the raw and LOQ-limited dataset (from Australia, Japan, Singapore, Thailand, and the United States of America). This year's analysis includes data from the 2013 analysis and newly reported data, and consists of 698 samples in the raw dataset (from Australia, China, Italy/EFSA, Japan, New Zealand, Poland, Singapore, Thailand, and the United States of America) and 611 samples in the LOQ-limited set (from Australia, China, Italy/EFSA, Japan, New Zealand, Poland, Thailand, and the United States). Therefore, the 2015 LOQ-limited dataset includes data from additional countries (China, Italy/EFSA, New Zealand, Poland) compared with the 2013 LOQ-limited dataset.[14]

21. We also note that only 6 of 611 (1%) samples in the 2015 LOQ-limited canned vegetables dataset did not meet the proposed 0.1 mg/kg ML, ranging in value from 0.11 to 0.26 mg/kg lead. These samples were all canned mushrooms or fungi, with the exception of one sample of canned bamboo shoots. However, of the 215 total canned mushroom and fungi samples in this dataset, 98 percent did meet the proposed 0.1 mg/kg limit. Likewise, 17 of 18 bamboo shoot samples met the proposed limit. Therefore, the EWG does not recommend excluding canned mushrooms and fungi or bamboo shoots from the canned vegetables ML.

22. **Canned fruits**. The 2015 canned fruits raw dataset consisted of 1210 results from the GEMS/Food database for samples collected and/or analyzed between 1998 and 2013. This dataset excludes berries and other small fruits, as agreed in 2013. Because the Committee agreed to revise the ML to 0.1 mg/kg in 2013, we prepared a 2015 LOQ-limited dataset excluding all results obtained with a method with an LOQ higher than 0.1 mg/kg. We excluded 92 samples with an LOQ > 0.1 mg/kg or no reported LOQ to obtain the LOQ-limited set of 1118 samples. Tables CF-1 and CF-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets, and Table CF-3 shows the mean and maximum lead levels associated with both these datasets. Finally, Table CF-4 shows the percentage of canned fruits samples meeting current and hypothetical MLs for the 2015 and 2013 LOQ-limited datasets.

23. For canned fruits, 96 percent of the samples in the 2015 LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.1 mg/kg) may meet the proposed (Step 5) Codex ML of 0.1 mg/kg (Table CF-4). This table also indicates that 93 percent of samples may meet a hypothetical ML of 0.075 mg/kg, and 91 percent of samples may meet a hypothetical ML of 0.05 mg/kg. Thus, lowering the ML to the hypothetical level of 0.1 mg/kg would eliminate approximately 4 percent of the samples in international trade, lowering the ML to the hypothetical level of 0.075 mg/kg would eliminate approximately 7 percent of the samples in international trade, and lowering the ML to the hypothetical level of 0.05 mg/kg would eliminate approximately 9 percent of the samples in international trade. Slightly lower elimination rates (Table CF-4) were reported in 2013. Because the exceedance rate at 0.1 mg/kg is still below 5 percent, the EWG again recommends establishing an ML for lead in canned fruits of 0.1 mg/kg, consistent with the recommendation sent to the Commission in 2013.

24. Because of concerns raised at the Commission meeting in 2013, the EWG wanted to address the geographical representativeness of the new dataset. The results reported in 2013 were based on 921 samples in the raw and LOQ-limited dataset (from Argentina, Australia, Canada, the European Union, Japan, New Zealand, Thailand, and the United States of America). This year's analysis includes data from the 2013 analysis and newly reported data, and consists of 1210 samples in the raw dataset (from Argentina, Australia, Canada, China, Denmark, Germany, Italy/EFSA, Japan, Lithuania, New Zealand, Spain, Thailand, and the United States of America) and 1118 samples in the LOQ-limited set (from Argentina, Australia, China, Denmark, Italy/EFSA, Japan, Lithuania, New Zealand, Spain, Thailand, and the United States of America). Therefore, the 2015 LOQ-limited dataset includes data from one additional non-European country (China) than the 2013 LOQ-limited dataset.

[14] Results from Singapore were included in 2013 and not in 2015 because of the lower LOQ limitation in 2015.

25. We also note that 42 of 1115 samples in the LOQ-limited canned fruit dataset had results greater than 0.1 mg/kg, ranging in value from 0.11 to 0.19 mg/kg. Table CF-5 shows the number and percent of each type of fruit in the LOQ-limited dataset, as well as the percentage of samples below 0.1 mg/kg for each type of fruit. For specific fruits, the percentage of samples ≤ 0.1 mg/kg was 96 percent or greater (after rounding), except for dekopons (0%), mandarin oranges (93%), peaches (90%), rambutans (86%), and Satsuma oranges (93%). The Committee may want to consider whether there is sufficient evidence to conclude that the recommended 0.1 mg/kg standard should be applied to all canned fruits. In this light, we note that there is only one sample each for canned dekopons and tangerines, and a small number of results above 0.1 mg/kg (2 of 28 total) for canned Satsuma oranges (Table CF-5).

26. **Berries and other small fruits**. The 2015 berries and other small fruits raw dataset consisted of 4447 results from the GEMS/Food database for samples collected and/or analyzed between 1997 and 2014. We included products that met the criteria for berries and other small fruits in the GSCTFF and the Codex Classification of Foods and Animal Feeds. We excluded products that appear to have been cooked, dried, canned or otherwise processed. Frozen berries and other small fruits were included.

27. Because the Committee did not endorse the proposed ML in 2014, we used the existing ML of 0.2 mg/kg to prepare our LOQ-limited dataset, as we did last year. We excluded 351 samples with an LOQ > 0.2 mg/kg or no reported LOQ to obtain the 2015 LOQ-limited set of 4096 samples. Tables FB-1 and FB-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets, and Table FB-3 shows the mean and maximum lead levels associated with both datasets. Table FB-4 shows the percentage of berry and other small fruit samples meeting current and hypothetical MLs for the 2015 and 2014 LOQ-limited datasets.

28. For berries and other small fruits, 99 percent of the samples in the LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.2 mg/kg) met the current Codex ML of 0.2 mg/kg (Table FB-4). This table also indicates that 98 percent of samples may meet a hypothetical ML of 0.1 mg/kg, 96 percent of samples may meet a hypothetical ML of 0.05 mg/kg, and that 90 percent of samples may meet a hypothetical ML of 0.02 mg/kg. Thus, lowering the ML to the hypothetical level of 0.1 mg/kg would eliminate approximately 2 percent of the samples in international trade, lowering the ML to the hypothetical level of 0.05 mg/kg would eliminate approximately 4 percent of the samples in international trade, and lowering the ML to the hypothetical level of 0.02 mg/kg would eliminate approximately 10 percent of the samples in international trade. Similar results were reported in 2014 (Table FB-4). Based on these results, the EWG again recommends lowering the ML to 0.1 mg/kg.

29. As noted above, the EWG wanted to address questions about whether certain subsets of berries and other small fruits, such as cranberries, currants, elderberries and strawberry tree berries, would have difficulty meeting revised MLs. Table FB-5 shows the number and percent of each type of fruit in the 2015 LOQ-limited dataset, as well as the percentage of samples ≤ 0.1 mg/kg for each type of fruit. The percentage of samples ≤ 0.1 mg/kg was 97 percent or greater for each type of fruit except for cranberries (93%), currants (94%), and elderberries (89%). The Committee may want to consider whether there is sufficient evidence to conclude whether or not the recommended 0.1 mg/kg standard should be applied to cranberries, currants, and elderberries. In this light, we note that there are a relatively small number of results for elderberries (9) (Table CF-5).

Vegetables

30. For all vegetables, we included products that met the criteria for legume vegetables, brassica vegetables, and fruiting vegetables in the GSCTFF and the Classification of Foods and Animal Feeds. We excluded products that appear to have been cooked or otherwise processed, such as foods described as sauces or as canned, preserved, salted, marinated, and dried. Because the Committee did not endorse the proposed MLs in 2014, we used the existing MLs of 0.2 mg/kg (legume), 0.3 mg/kg (brassica), and 0.1 mg/kg (fruiting vegetables) to prepare our LOQ-limited datasets, as we did last year.

31. **Legume vegetables**. The 2015 legume vegetables raw dataset consisted of 3376 results from the GEMS/Food database for samples collected and/or analyzed between 1997 and 2014. We excluded 413 samples with an LOQ > 0.2 mg/kg or no reported LOQ to obtain the 2015 LOQ-limited set of 2963 samples. Tables VP-1 and VP-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets. Table VP-3 shows the mean and maximum lead levels associated with both datasets. Finally, Table VP-4 shows the percentage of legume vegetable samples meeting current and hypothetical MLs for the 2015 and 2014 LOQ-limited datasets.

32. For legume vegetables, 99 percent of the samples in the 2015 LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.2 mg/kg) met the current Codex ML of 0.2 mg/kg (Table VP-4). This table also indicates that 96 percent of samples may meet a hypothetical ML of 0.1 mg/kg, and 89 percent of samples may meet a hypothetical ML of 0.05 mg/kg. Similar results (96 percent of samples meeting a proposed ML of 0.1 mg/kg) were reported in 2014 (Table VP-4). Thus, lowering the ML to the hypothetical level of 0.1 mg/kg would eliminate approximately 4 percent of the samples in international trade. The EWG again recommends lowering the ML to 0.1 mg/kg.

33. **Brassica vegetables**. The 2015 brassica vegetables raw dataset consisted of 3660 results from the GEMS/Food database for samples collected and/or analyzed between 2001 and 2014. We excluded 623 samples with an LOQ > 0.3 mg/kg or no reported LOQ to obtain the 2015 LOQ-limited set of 3037 samples. Tables VB-1 and VB-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets. Table VB-3 shows the mean and maximum lead levels associated with both datasets. Table VB-4 shows the percentage of brassica vegetable samples meeting current and hypothetical MLs for the 2015 and 2014 LOQ-limited datasets.

34. For brassica vegetables, 100[15] percent of the samples in the 2015 LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.3 mg/kg) met the current Codex ML of 0.3 mg/kg (Table VB-4). This table also indicates that 99 percent of samples may meet a hypothetical ML of 0.2 mg/kg, and 99 percent of samples may meet a hypothetical ML of 0.1 mg/kg. Similar results (99 percent of samples meeting a proposed ML of 0.1 mg/kg) were reported in 2014 (Table VB-4). Thus, lowering the ML to the hypothetical level of 0.1 mg/kg would eliminate approximately 1 percent of the samples in international trade. The EWG again recommends lowering the ML to 0.1 mg/kg.

35. **Fruiting vegetables, cucurbits**. The 2015 fruiting vegetables, cucurbits, raw dataset consisted of 2860 results from the GEMS/Food database for samples collected and/or analyzed between 1998 and 2014. We excluded 323 samples with an LOQ > 0.1 mg/kg or no reported LOQ to obtain the 2015 LOQ-limited set of 2537 samples. Tables VC-1 and VC-2 (in Appendix I) show the breakdown by country of the raw dataset and the LOQ-limited dataset. Table VC-3 shows the mean and maximum lead levels associated with both datasets. Finally, Table VC-4 shows the percentage of fruiting vegetable, cucurbits, samples meeting current and hypothetical MLs for the 2015 and 2014 LOQ-limited datasets.

36. For fruiting vegetables, cucurbits, 99 percent of the samples in the 2015 LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.1 mg/kg) met the current Codex ML of 0.1 mg/kg (Table VC-4). This table also indicates that 98 percent of samples may meet a hypothetical ML of 0.05 mg/kg, and 94 percent of samples may meet a hypothetical ML of 0.02 mg/kg. Similar results (97 percent of samples meeting a proposed ML of 0.05 mg/kg) were reported in 2014 (Table VC-4). Thus, lowering the ML to the hypothetical level of 0.05 mg/kg would eliminate approximately 2 percent of the samples in international trade. The EWG again recommends lowering the ML to 0.05 mg/kg.

37. **Fruiting vegetables, other than cucurbits**. The 2015 fruiting vegetables, other than cucurbits, raw dataset consisted of 4635 results from the GEMS/Food database for samples collected and/or analyzed between 1997 and 2014. Consistent with last year's approach[16], we excluded all fungi and edible mushrooms from the raw dataset. We excluded 397 samples with an LOQ > 0.1 mg/kg or no reported LOQ or samples missing results to obtain the 2015 LOQ-limited set of 4238 samples. Tables VO-1 and VO-2 (in Appendix I) show the breakdown by country of the 2015 raw and LOQ-limited datasets, and Table VO-3 shows the mean and maximum lead levels associated with both datasets. Table VO-4 shows the percentage of fruiting vegetable, other than cucurbits, samples meeting current and hypothetical MLs for the 2015 and 2014 LOQ-limited datasets.

38. For fruiting vegetables, other than cucurbits, 99 percent of the samples in the 2015 LOQ-limited dataset (i.e., results obtained with a method with an LOQ ≤ 0.1 mg/kg) met the current Codex ML of 0.1 mg/kg (Table VO-4). This table also indicates that 97 percent of samples may meet a hypothetical ML of 0.05 mg/kg and 92 percent of samples may meet a hypothetical ML of 0.02 mg/kg. Similar results (97 percent of samples meeting a proposed ML of 0.05 mg/kg) were reported in 2014 (Table VO-4). Thus, lowering the ML to the hypothetical level of 0.05 mg/kg would eliminate approximately 3 percent of the samples in international trade, while lowering the ML to the hypothetical level of 0.02 mg/kg would eliminate approximately 8 percent of the samples in international trade. The EWG again recommends lowering the ML for fruiting vegetables, other than cucurbits, to 0.05 mg/kg, but excluding fungi and mushrooms. The Committee may want to consider establishing a separate ML for fungi and mushrooms.

ADDITIONAL TOPICS

39. One country (Canada) noted that it may be worth considering harmonizing MLs for lead in "fruiting vegetables, cucurbits" and "fruiting vegetables, other than cucurbits" with proposed MLs of 0.1 mg/kg for canned vegetables, canned fruit, berries and other small fruits, legumes, and brassica vegetables for consistency.

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[15] Rounded from 99.6%

[16] CX/CF 14/8/5

40. As noted in paragraph 37, the EWG previously recommended excluding fungi and mushrooms from the proposed ML for "fruiting vegetables, other than cucurbits."[17] Canada requested additional data on mushroom and fungi availability to support this recommendation. Briefly, the EWG recommended excluding mushrooms and fungi in 2014 because including them markedly decreased ML achievability. For example, 99 percent of "fruiting vegetables, other than cucurbits" excluding fungi and mushrooms met a hypothetical 0.1 mg/kg ML, 94 percent of "fruiting vegetables, other than cucurbits" including fungi and mushrooms met a 0.1 mg/kg ML, but only 79 percent of fungi and mushrooms alone met a 0.1 mg/kg ML.

41. One country (Canada) noted that if the lead concentration (the result) is positive and the LOQ is higher than the proposed ML, then the result potentially could be included in the dataset and that removing all positive results that used a method where the LOQ was higher than the proposed ML could potentially skew the dataset downwards, and questioned whether such results should be excluded. In order to be consistent with the approach taken in previous years, we did not revise the LOQ limitation process.

42. Several countries (Brazil, Australia, Iran) reported having additional results on fruit juices after the deadline for data submission, but these results are not yet available in GEMS. Brazil reported that its passionfruit juice samples had higher lead levels than other juices (approximately 15 percent of Brazil's 85 passionfruit juice samples exceeded 0.05 mg/kg; approximately 30 percent exceeded 0.03 mg/kg). The Committee may want to consider whether it is premature to lower the ML for passionfruit juices based on the results from Brazil, or whether no action on passionfruit juices should be taken until additional/complete passionfruit data are available in the GEMS/Food database.

43. One country (Korea) noted that the Codex Committee on Pesticide Residues is proposing to reclassify Chinese cabbage and kimchi cabbage as brassica vegetables and asked the EWG to confirm that these products would meet the proposed ML for brassica vegetables. We reanalyzed an LOQ (0.3 mg/kg)-limited set of 672 Chinese cabbage samples that were analyzed in 2014 as leafy vegetables, and 100 percent of these samples met the proposed ML of 0.2 mg/kg for brassica vegetables.

SUMMARY AND RECOMMENDATIONS

44. In summary, reanalysis of selected foods supports lowering the MLs for lead. The EWG makes the following recommendations.

1. Fruit juices and nectars, ready-to-drink (excluding juices from berries and other small fruits): Consider lowering the ML to 0.03 mg/kg.
2. Canned fruits (excluding berries and other small fruits) and canned vegetables (excluding canned brassica, leafy, and legume vegetables): Consider lowering the MLs to 0.1 mg/kg.
3. Berries and other small fruits: Consider lowering the ML to 0.1 mg/kg. Consider whether the existing ML should be retained for certain berry types (cranberry, currant, elderberry).
4. Legume vegetables: Consider lowering the ML to 0.1 mg/kg.
5. Brassica vegetables: Consider lowering the ML to 0.1 mg/kg.
6. Fruiting vegetables, cucurbits: Consider lowering the ML to 0.05 mg/kg.
7. Fruiting vegetables, other than cucurbits: Consider lowering the ML to 0.05 mg/kg, but excluding fungi and mushrooms.

[17] CX/CF14/8/5, para. 36

Appendix I

Tables[18]

Table FJ-1: Fruit juices and nectars: Data contribution by country to 2015 raw dataset

Country	Number of samples
Argentina	2
Australia	12
Austria	324
Belgium	20
Canada	24
China	129
Czech Republic	24
Finland	1
France	90
Germany	136
Greece	8
Hungary	20
India	37
Ireland	1
Italy/EFSA	1494
Japan	71
Lithuania	1
New Zealand	17
Poland	73
Romania	271
Singapore	115
Slovakia	55
Slovenia	13
Spain	50
Thailand	116
USA	960
Grand Total	**4064**

[18] Some countries submitted aggregated data corresponding to single analytical results obtained by pooling several individual samples. For the LOQ- limited datasets, only 80 aggregated samples over more than 18,000 remained from 7 countries. By definition, pooling samples decreases the apparent variability, however, for the current analysis it is unlikely that the pooled samples have a significant impact.

Table FJ-2: Fruit juices and nectars: Data contribution by country to 2015 LOQ-limited dataset

Country	Number of samples
Argentina	2
Australia	12
Austria	122
Canada	3
China	122
Finland	1
France	56
Germany	9
Hungary	1
India	17
Italy/EFSA	1269
Japan	52
New Zealand	17
Poland	28
Romania	108
Singapore	20
Slovakia	38
Spain	2
Thailand	68
USA	912
Grand Total	**2859**

Table FJ-3: Fruit juices and nectars: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.007	0.69
LOQ-limited dataset	0.004	0.37

Table FJ-4: Percentage of fruit juice and nectar samples meeting current and hypothetical MLs: LOQ-limited dataset

Current and hypothetical MLs (mg/kg)	2015 Percentage of samples ≤ MLs	2013** Percentage of samples ≤ MLs
0.05	99%	99%
0.04*	98%	98%
0.03	97%	96%
0.02	95%	92%

*Hypothetical MLs shown in italics

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Table FJ-5: Fruit juices and nectars: Data contribution by type of juice or nectar to LOQ-limited dataset

Type of fruit juice or nectar	Number of samples (percent of total samples)	Percent of samples ≤ 0.03 mg/kg
Acai	1 (0.03%)	100.0%
Acerola	1 (0.03%)	100.0%
Apple	779 (27.26%)	97.4%
Apple nectar	20 (0.70%)	95.0%
Apricot	3 (0.10%)	100.0%
Apricot nectar	3 (0.10%)	100.0%
Banana nectar	4 (0.14%)	100.0%
Cherry	1 (0.03%)	100.0%
Gac	1 (0.03%)	0.0%
Grapefruit	70 (2.45%)	100.0%
Grapefruit nectar	1 (0.03%)	100.0%
Guanabana nectar	2 (0.07%)	100.0%
Guava	11 (0.38%)	100.0%
Guava nectar	14 (0.49%)	100.0%
Honeydew	1 (0.03%)	100.0%
Juice, NES/mix*	591 (20.67%)	97.1%
Kiwi	1 (0.03%)	100.0%

Type of fruit juice or nectar	Number of samples (percent of total samples)	Percent of samples ≤ 0.03 mg/kg
Lemon	9 (0.31%)	100.0%
Lime	3 (0.10%)	100.0%
Litchi	5 (0.17%)	100.0%
Mango	19 (0.66%)	100.0%
Mango nectar	17 (0.59%)	100.0%
Mangosteen	6 (0.21%)	100.0%
Mixed fruit and vegetable juice	175 (6.12%)	90.9%
Nectar, NES/mix*	101 (3.53%)	96.0%
Noni	1 (0.03%)	0.0%
Orange	531 (18.57%)	97.2%
Orange nectar	17 (0.59%)	100.0%
Papaya juice	3 (0.10%)	100.0%
Papaya nectar	2 (0.07%)	100.0%
Passionfruit	5 (0.17%)	100.0%
Passionfruit nectar	1 (0.03%)	100.0%
Peach	16 (0.56%)	100.0%
Peach nectar	28 (0.98%)	100.0%
Pear	103 (3.60%)	98.1%
Pear nectar	18 (0.63%)	94.4%
Pineapple	194 (6.79%)	99.0%
Pineapple nectar	12 (0.42%)	100.0%
Plum	2 (0.07%)	100.0%
Pomegranate	19 (0.66%)	73.7%
Pomegranate nectar	1 (0.03%)	100.0%
Prickly pear	1 (0.03%)	100.0%
Prune	56 (1.96%)	98.2%
Pummelo	1 (0.03%)	100.0%

Type of fruit juice or nectar	Number of samples (percent of total samples)	Percent of samples ≤ 0.03 mg/kg
Quince	**1 (0.03%)**	**0.0%**
Sour cherry nectar	**1 (0.03%)**	**100.0%**
Tamarind	**1 (0.03%)**	**100.0%**
Tamarind nectar	**2 (0.07%)**	**100.0%**
Tangerine	**4 (0.14%)**	**100.0%**
Grand Total	**2859**	**100.00%**

* Not elsewhere specified or mix of juices/nectars

Table CV-1: Canned vegetables: Data contribution by country to 2015 raw dataset

Country	Number of samples
Australia	8
China	51
Italy/EFSA	159
Japan	137
New Zealand	19
Poland	68
Singapore	26
Thailand	31
USA	199
Grand Total	**698**

Table CV-2: Canned vegetables: Data contribution by country to 2015 LOQ-limited dataset

Country	Number of samples
Australia	8
China	51
Italy/EFSA	144
Japan	137
New Zealand	19
Poland	42
Thailand	11
USA	199
Grand Total	**611**

Table CV-3: Canned vegetables: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.015	2.048
LOQ-limited dataset	0.009	0.261

Table CV-4: Percentage of canned vegetable samples meeting current and hypothetical MLs: LOQ-limited dataset

Current and hypothetical MLs (mg/kg)	2015 Percentage of samples ≤ MLs	2013** Percentage of samples ≤ MLs
0.1	99%	99%
0.075*	98%	---
0.05	96%	96%
0.02	88%	89%

*Hypothetical MLs shown in italics

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Table CF-1: Canned fruits: Data contribution by country to 2015 raw dataset

Country	Number of samples
Argentina	3
Australia	13
Canada	8
China	45
Denmark	28
Germany	1
Italy/EFSA	309
Japan	198
Lithuania	4
New Zealand	24
Spain	8
Thailand	71
USA	498
Grand Total	**1210**

Table CF-2: Canned fruits: Data contribution by country to 2015 LOQ-limited dataset

Country	Number of samples
Argentina	3
Australia	13
Denmark	28
China	45
Italy/EFSA	292
Japan	198
Lithuania	3
New Zealand	24
Spain	2
Thailand	26
USA	484
Grand Total	**1118**

Table CF-3: Canned fruits: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.02	0.38
LOQ-limited dataset	0.02	0.19

Table CF-4: Percentage of canned fruit samples meeting current and hypothetical MLs: LOQ-limited dataset

Current and hypothetical MLs (mg/kg)	2015 Percentage of samples ≤ MLs	2013** Percentage of samples ≤ MLs
0.1	96%	98%
0.075*	93%	---
0.05	91%	95%
0.020	70%	76%

*Hypothetical MLs shown in italics

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Table CF-5: Canned fruits: Data contribution by type of fruit to 2015 LOQ-limited dataset

Type of fruit	Number of samples (percent of total samples)	Percent of samples ≤ 0.1 mg/kg
Apple	6 (0.5%)	100.0%
Apricot	51 (4.6%)	100.0%
Cherry	24 (2.1%)	95.8%
Dekopon	1 (0.1%)	0.0%
Fig	4 (0.4%)	100.0%
Grapefruit	8 (0.7%)	100.0%
Jackfruit	2 (0.2%)	100.0%
Litchi	10 (0.9%)	100.0%
Longan	5 (0.4%)	100.0%
Mandarin orange	110 (9.8%)	91.8%
Mango	13 (1.2%)	100.0%
NES/mix*	212 (19.0%)	99.5%
Orange	3 (0.3%)	100.0%
Peach	228 (20.4%)	90.4%
Pear	165 (14.8%)	96.4%
Pineapple	238 (21.3%)	100.0%
Plum	2 (0.2%)	100.0%
Rambutan	7 (0.6%)	85.7%
Satsuma orange	28 (2.5%)	92.9%
Tangerine	1 (0.1%)	100.0%
Grand Total	1118 (100%)	---

*Not elsewhere specified or mix of fruits

Table FB-1: Berries and other small fruits: Data contribution by country to raw dataset

Country	Number of samples
Australia	98
Belgium	8
Bulgaria	6
Canada	479
China	194
Cyprus	2
Czech Republic	20
Denmark	1
Finland	51
France	14
Germany	377
Hungary	7
Ireland	39
Italy/EFSA	1958
Japan	511
Lithuania	2
Netherlands	4
New Zealand	19
Romania	8
Singapore	10
Slovakia	45
Slovenia	111
Spain	40
Thailand	41
United Kingdom	230
USA	172
Grand Total	**4447**

Table FB-2: Berries and other small fruits: Data contribution by country to 2015 LOQ-limited dataset

Country	Number of samples
Australia	98
Belgium	8
Bulgaria	4
Canada	448
China	194
Cyprus	2
Czech Republic	16
Denmark	1
Finland	31
France	10
Germany	326
Hungary	3
Ireland	25
Italy/EFSA	1905
Japan	511
Netherlands	2
New Zealand	19
Romania	4
Slovakia	24
Slovenia	111
Spain	40
Thailand	41
United Kingdom	102
USA	171
Grand Total	**4096**

Table FB-3: Berries and other small fruits: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.010	0.695
LOQ-limited dataset	0.009	0.695

Table FB-4: Percentage of berries and other small fruits samples meeting current and hypothetical MLs: LOQ- limited dataset

Current and hypothetical MLs (mg/kg)	**2015** Percentage of samples ≤ MLs	**2014**** Percentage of samples ≤ MLs
0.2	99%	99%
0.1*	98%	98%
0.05	96%	95%
0.02	90%	89%

*Hypothetical MLs shown in italics

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Table FB-5: Berries and other small fruits: Data contribution by type of fruit to LOQ-limited dataset

Type of fruit	Number of samples (percent of total samples)	Percent of samples ≤ 0.1 mg/kg
Berries and other small fruits, NES	44 (1.1%)	95.5%
Bilberry	19 (0.5%)	100.0%
Blackberries	195 (4.8%)	99.5%
Blueberries	173 (4.2%)	98.3%
Boysenberry	2 (0.1%)	100.0%
Cloudberry	13 (0.3%)	100.0%
Cranberries	54 (1.3%)	92.6%
Currants	139 (3.4%)	93.5%
Elderberries	9 (0.2%)	88.9%
Goji	1 (0.02%)	100.0%
Gooseberry	42 (1.0%)	100.0%
Grapes	1707 (41.7%)	97.4%
Huckleberries	15 (0.4%)	100.0%
Lingonberries	46 (1.1%)	97.8%
Raspberries	381 (9.3%)	100.0%
Rose hips	5 (0.1%)	100.0%
Sea buckthorn	3 (0.1%)	100.0%
Strawberry	1243 (30.4%)	99.8%
Strawberry tree	4 (0.1%)	100.0%
Wolfberries	1 (0.02%)	100.0%
Grand Total	4096	100%

*Not elsewhere specified

Table VP-1: Legume vegetables: Data contribution by country to 2015 raw dataset

Country	Number of samples
Australia	20
Bulgaria	162
Canada	197
China	145
Cyprus	2
Czech Republic	13
Finland	16
France	16
Germany	178
Greece	15
Hungary	4
Ireland	5
Italy/EFSA	1033
Japan	103
Netherlands	6
New Zealand	3
Portugal	7
Republic of Korea	1023
Romania	2
Singapore	80
Slovakia	110
Slovenia	61
Spain	30
Thailand	57
United Kingdom	82
USA	6
Grand Total	**3376**

Table VP-2: Legume vegetables: Data contribution by country to LOQ-limited dataset

Country	Number of samples
Australia	20
Bulgaria	84
Canada	181
China	145
Cyprus	2
Czech Republic	8
Finland	13
France	10
Germany	142
Greece	9
Hungary	2
Italy/EFSA	994
Japan	103
Netherlands	3
New Zealand	3
Republic of Korea	1023
Romania	1
Slovakia	30
Slovenia	61
Spain	20
Thailand	57
United Kingdom	46
USA	6
Grand Total	**2963**

Table VP-3: Legume vegetables: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.025	2.103
LOQ-limited dataset	0.018	0.930

Table VP-4: Percentage of legume vegetable samples meeting current and hypothetical MLs: LOQ- limited dataset

Current and hypothetical MLs (mg/kg)	2015 Percentage of samples ≤ MLs	2014** Percentage of samples ≤ MLs
0.2	99%	99%
0.1*	96%	96%
0.05	89%	89%

*Hypothetical MLs shown in italics

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Table VB-1: Brassica vegetables: Data contribution by country to 2015 raw dataset

Country	Number of samples
Bulgaria	3
Canada	250
China	127
Czech Republic	27
Finland	14
France	8
Germany	244
Hungary	5
Ireland	108
Italy/EFSA	1647
Japan	225
Netherlands	6
New Zealand	9
Poland	16
Portugal	2
Republic of Korea	240
Romania	30
Singapore	1
Slovakia	84
Slovenia	28
Spain	44
Thailand	87
United Kingdom	454
USA	1
Grand Total	**3660**

Table VB-2: Brassica vegetables: Data contribution by country to 2015 LOQ-limited dataset

Country	Number of samples
Bulgaria	3
Canada	220
China	127
Czech Republic	19
Finland	14
France	4
Germany	219
Hungary	5
Ireland	15
Italy/EFSA	1515
Japan	225
Netherlands	5
New Zealand	1
Poland	9
Portugal	2
Republic of Korea	240
Romania	17
Slovakia	33
Slovenia	28
Spain	34
Thailand	87
United Kingdom	214
USA	1
Grand Total	**3037**

Table VB-3: Brassica vegetables: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.011	1.49
LOQ-limited dataset	0.009	1.49

Table VB-4: Percentage of brassica vegetable samples meeting current and hypothetical MLs: LOQ-limited dataset

Current and hypothetical MLs (mg/kg)	**2015** **Percentage of samples ≤ MLs**	**2014**** **Percentage of samples ≤ MLs**
0.3	100%***	99%
0.2*	99%	99%
0.1	99%	98%
0.05	96%	95%

*Hypothetical MLs shown in italics

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***After rounding

Table VC-1: Fruiting vegetables, cucurbits: Data contribution by country to 2015 raw dataset

Country	Number of samples
Australia	61
Austria	2
Bulgaria	8
Canada	433
China	148
Czech Republic	10
Finland	14
France	36
Germany	322
Hungary	4
India	1
Ireland	2
Italy/EFSA	1022
Japan	205
Lithuania	2
Netherlands	3
New Zealand	27
Nigeria	2
Romania	43
Singapore	30
Slovakia	52
Slovenia	1
Spain	42
Thailand	128
United Kingdom	110
USA	152
Grand Total	**2860**

Table VC-2: Fruiting vegetables, cucurbits: Data contribution by country to 2015 LOQ-limited dataset

Country	**Number of samples**
Australia	61
Austria	2
Bulgaria	7
Canada	417
China	140
Czech Republic	6
Finland	14
France	16
Germany	252
Hungary	1
India	1
Italy/EFSA	969
Japan	205
Netherlands	2
New Zealand	27
Nigeria	2
Romania	18
Slovakia	38
Spain	38
Thailand	128
United Kingdom	42
USA	151
Grand Total	**2537**

Table VC-3: Fruiting vegetables, cucurbits: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.007	0.62
LOQ-limited dataset	0.004	0.36

Table VC-4: Percentage of fruiting vegetables, cucurbits, samples meeting current and hypothetical MLs: LOQ- limited dataset

Current and hypothetical MLs (mg/kg)	2015 Percentage of samples ≤ MLs	2014** Percentage of samples ≤ MLs
0.1	99%	99%
0.05*	98%	97%
0.02	94%	---

*Hypothetical MLs shown in italics

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Table VO-1: Fruiting vegetables, other than cucurbits: Data contribution by country to 2015 raw dataset

Country	Number of samples
Australia	112
Bulgaria	12
Canada	525
China	147
Cyprus	7
Czech Republic	24
Denmark	1
Finland	37
France	25
Germany	69
Hungary	8
India	3
Ireland	6
Italy/EFSA	1792
Japan	309
Lithuania	4
Netherlands	6
New Zealand	19
Poland	9
Portugal	2
Republic of Korea	682
Romania	70
Singapore	71
Slovakia	99
Slovenia	65
Spain	89
Thailand	289
United Kingdom	50
USA	103
Grand Total	**4635**

Table VO-2: Fruiting vegetables, other than cucurbits: Data contribution by country to 2015 LOQ-limited dataset

Country	Number of samples
Australia	112
Bulgaria	12
Canada	501
China	137
Cyprus	6
Czech Republic	6
Finland	33
France	17
Germany	56
Hungary	5
India	2
Italy/EFSA	1673
Japan	309
Lithuania	2
Netherlands	6
New Zealand	19
Poland	2
Republic of Korea	682
Romania	28
Singapore	13
Slovakia	44
Slovenia	65
Spain	78
Thailand	289
United Kingdom	38
USA	103
Grand Total	**4238**

Table VO-3: Fruiting vegetables, other than cucurbits: Mean and maximum for all 2015 datasets

Dataset	Mean (mg/kg)	Maximum (mg/kg)
Raw dataset	0.0095	1.42
LOQ-limited dataset	0.006	1.11

Table VO-4: Percentage of fruiting vegetable, other than cucurbit, samples meeting current and hypothetical MLs: LOQ- limited dataset

Current and hypothetical MLs (mg/kg)	2015 Percentage of samples ≤ MLs	2014 Percentage of samples ≤ MLs**
0.1	99%	99%
0.05*	97%	97%
0.02	92%	---

*Hypothetical MLs shown in italics

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Appendix II

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