CODEX ALIMENTARIUS COMMISSION E

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 3 **CF11/CRD06**
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON CONTAMINANTS IN FOODS

Eleventh Session
Rio de Janeiro, Brazil, 3 – 7 April 2017

To be held at the Windsor Marapendi Hotel, Rio de Janeiro, Brazil

MATTERS OF INTEREST ARISING FROM FAO AND WHO (INCLUDING JECFA)

Comments submitted by EU, Georgia, Kenya, Samoa, AU and ICBWA

EU

Agenda Item 3 Add. 1: WHO GUIDELINES FOR DRINKING-WATER QUALITY AND HEALTH-RELATED LIMITS FOR CERTAIN SUBSTANCES IN THE STANDARD FOR NATURAL MINERAL WATERS (CODEX STAN 108-1981)

The EU strongly believes that in considering the health-related limits for certain substances in the Standard for Natural Mineral Waters (NMW), the specific characteristics of NMW laid down in Section 2.1 of the Standard have to be respected:

> ***"Definition of natural mineral water***
>
> ***Natural mineral water*** *is clearly distinguishable from ordinary drinking water because:*
>
> *(a) it is characterized by its content of certain mineral salts and their relative proportions and the presence of trace elements or of other constituents;*
>
> *(b) it is obtained directly from natural or drilled sources from underground water bearing strata for which all possible precautions should be taken within the protected parameters to avoid any pollution of, or external influence on, the chemical and physical qualities of natural mineral water;*
>
> *(c) of the constancy of its composition and the stability of its discharge and its temperature, due account being taken of the cycles of minor natural fluctuations;*
>
> *(d) it is collected under conditions which guarantee the original microbiological purity and chemical composition of essential components;*
>
> *(e) it is packaged close to the point of emergence of the source with particular hygienic precautions;*
>
> *(f) it is not subjected to any treatment other than those permitted by this standard*."

It is essential to bear in mind the clear distinction between NMW and drinking water. NMW can be clearly distinguished from drinking water by its characteristics that include its mineral content, trace elements and other constituents, and by its "original purity" that is preserved as a result of protection of the water from all risk of pollution. Therefore, certain parameters and their values that are applicable to drinking water may not be applicable to NMW.

Therefore, drinking water standards cannot serve as a *de facto* model for NMW and the WHO values for drinking water should not be used as a sole basis for setting limits for NMW and therefore the EU cannot accept to take over the revised WHO guideline values in the Standard for Natural Mineral Waters without any further in depth discussion.

Agenda Item 3 Add. 2 UPDATE ON RELEVANT WORK TO BE CONSIDERED FOR CIGUATOXINS

The European Union can support considering the development of risk management options for C-CTX-1 and P-CTX-1.

The European Union supports the initiative to request FAO/WHO for scientific advice, in particular to:

- Carry out a risk assessment of CTX (ciguatoxins) and based on this provide guidance for the development of risk management options.
- Review existing analytical methods for ciguatoxin detection and quantification, with a view to recommend those useful for routine analysis and surveillance.

GEORGIA

Specifically, we request that no final action be taken on this issue at the review to be undertaken by the CCCF and the short comment period does not facilitate the discussion required. We request that an electronic working group be established to allow appropriate consideration of all the merits on the issue.

Hereby, we would like to emphasize that this issues is of great importance for Georgian mineral water industry. We look forward for positive consideration.

KENYA

RECOMMENDATIONS

17. The Committee is invited to review the limits in the Standard for Natural Mineral Waters in light of the revised values included in the GDWQ.

For limits of **barium, boron and selenium**, consider aligning with the guideline values in the GDWQ as appropriate.

For **cyanide** consider reviewing the current level taking into account that the guideline value in the GDWQ was withdrawn.

For **manganese** consider reviewing the current level taking into account that the guideline value in the GDWQ was changed to a health-based values.

COMMENT

we will not support the limits increased in the natural mineral water in selnium,maganese using values of GDWQ .We would like to propose the retaining of the original limits since the health -base values is not well explained to convince us. We have been using WHO guidelines as stated in Codex natural mineral standards as stated below and we have not faced any trade challenges.

3.2 Health-related limits for certain substances

Natural mineral water in its packaged state shall contain not more than the followir of the substances indicated hereunder:

3.2.1 Antimony 0.005 mg/l

3.2.2 Arsenic 0.01 mg/l, calculated as total As

3.2.3 Barium 0.7 mg/l[1]

3.2.4 Borate 5 mg/l, calculated as B

3.2.5 Cadmium 0.003 mg/l

3.2.6 Chromium 0.05 mg/l, calculated as total Cr

3.2.7 Copper 1 mg/l

3.2.8 Cyanide 0.07 mg/l

3.2.9 Fluoride See section 6.3.2

3.2.10 Lead 0.01 mg/l

3.2.11 Manganese 0.4 mg/l

3.2.12 Mercury 0.001 mg/l

3.2.13 Nickel 0.02 mg/l

3.2.14 Nitrate 50 mg/l, calculated as nitrate

3.2.15 Nitrite 0.1 mg/l as nitrite

3.2.16 Selenium 0.01 mg/l

THE GUIDELINE VALUES IN THE GDWQ

11. The Guideline Values for the following substances were revised:

Table 1 The Revisions of the Guideline Values in the GDWQ

Chemicals	3rd Edition	4th Edition	Addendum to the 4th Edition
Barium	0.7 mg/l	-	1.3 mg/l
Boron	0.5 mg/l	2.4 mg/l	-
Cyanide	0.07 mg/l	Withdrawn	-
Manganese	0.4 mg/l	Changed to a health-based value	-
Selenium	0.01 mg/l	0.04 mg/l	-

*Limits in the Standard for Natural Mineral Waters:
Barium 0.7 mg/l, Boron 0.5 mg/l, Cyanide 0.07 mg/l, Manganese 0.4 mg/l, Selenium 0.01 mg/l

SAMOA

Background

The Ministry of Agriculture and Fisheries through its Fisheries Division with its Inshore Section carries out ongoing bi-annual algae sampling analysis for Ciguatera to monitor the presence of the ciguatoxicdinoflagellate, Gambierdiscustoxicus since 2007. There are eight (8) selected sites inUpolu (Fagaloa-Taelefaga, Maasina, Lona; Simu-Aganoa; Lefaga; Lefaga-Faleaseela, Matafaa; Manono-Faleu; Mulifanua) and four (4) in Savaii (Tafua-tai, Fagamalo, Safune, Falealupo) based on the 2005 survey which identified these sites. There were also sites covered in the past years to expand the coverage.

The main algae species collected; sampled and analyzed are *Halimeda sp, Turbinaria sp, Padina gymnospora, Saragassum sp* and most common tropical seaweeds. We have detected the positive presence of the *G.toxicus* in some sites since the sampling. In 2008 there was only one site with the positive identification of *G.toxicus* was from Matafaa reef site. Majorities of the samples were negative.

In 2012 positive presence of *G.toxicus* were detected at 5 selected sites (Faleseela, Siumu, Lona, Maasina and Tafua) (table.1). However most of the sites show low number per 100grams of algae.

Table.1: Summary details on samples tested positive of G.toxicus in 2012

Site Sample	Av. Count Toxicus	Transparency layer (h)	Total Volume of sample (∏d²h)	No. of subsample/Total Volume	No. of G. spp/100 grams of algae
Faleseela (ST2 S2)	4	2.1	22.59	226	904
Siumu (ST1S1)	3	2.7	29.04	290	871
Siumu (ST1S2)	5	2.5	26.89	269	1345
Siumu (ST2S1)	2	2.5	26.89	269	538
Lona (ST3S2)	1	2	21.51	215	215
Maasina (ST1S1)	1	2.1	22.59	226	226
Tafua (ST1S2)	2	2.3	24.74	247	495
Tafua (ST2S2)	3	2.1	22.59	226	67

Diameter of the sample bottle: 3.7cm (d=1.85), Subsample amount: 0.1ml (Source: Inshore Fisheries Bi-annual algae sampling analysis for Ciguatera 2013)

In 2013 new sites were identified with positive presence of the dinoflagellates Faleu, Mulifanua and Siumu. The detection of toxin had increased per 100 grams of algae from the samples collected at Siumu (table 2).

Table.2: Summary details on samples tested positive of G.toxicus in 2013

Site Sample	Ciguatera Count	Transparency Layer (h=cm)	Total Volume of sample (∏d²h)	No. of subsample/ Total Volume	No. of G. spp/100 grams of algae
Faleu (ST2S1)	5	2.5	24.04	240	1202
Faleu (ST2S2)	2	2.6	25.00	250	500
Faleu (ST3S1)	6	2.5	24.04	240	1442
Mulifanua (ST2S1)	3	2.5	24.04	240	721
Mulifanua (ST2S2)	2	2.5	24.04	240	481
Mulifanua (ST3S1)	3	2.5	24.04	240	721
Mulifanua (ST3S2)	2	2.5	24.04	240	481
Matafaa (ST1S1)	1	2.5	24.04	240	240
Siumu (ST1S1)	3	2.4	23.08	231	692
Siumu (ST1S2)	7	2.5	24.04	240	1683
Siumu (ST2S1)	2	2.5	24.04	240	481
Siumu (ST2S2)	6	2.4	23.08	231	1385
Siumu (ST3S1)	4	2.5	24.04	240	962
Siumu (ST3S2)	3	2.5	24.04	240	721

Diameter of the sample bottle: 3.5 cm (d=1.85), Subsample amount: 0.1ml (Source: Inshore Fisheries Bi-annual algae sampling analysis for Ciguatera 2013)

Once detected the positive presence of the *G.toxicus*, the communities were notified for their proper actions to avoid and minimize impacts from ciguatera-fish poisoning.

Recommendations

- the establishment of maximum limits for C-CTX-1 and P-CTX-1;
- and/ or the development of risk management guidelines;
- carry out a risk assessment of CTX (ciguatoxins) and based on this provide guidance for the development of risk management options
- review existing analytical methods for ciguatoxin detection and quantification, with a view to recommend those useful for routine analysis and surveillance

Samoa agreed with the above recommendations to review existing analytical methods as there are several species of Gambierdiscus that are similar in shape under the microscope for identification as well as developing risk management options to minimize the ciguatera impacts to our coastal fisheries resource. Therefore, Samoa is recommended to identify or have this method to identify ciguatoxins in fishery products as well as Gambierdiscus.

No doubt the identification of Gambierdiscus will be covered under the review of analytical methods. Having said that, effectiveness of these analytical methods has to put into practice and that's where we identify the various Gambierdiscuss spp.

AU

3.1.0 JECFA 83rd Session Report on Glycidyl esters, 3-MCPD esters, sterigmatocystin and co-exposure to aflatoxins and fumonisins

3.1.1 Glycidyl esters

General comments

AU welcomes JECFA's evaluation of glycidyl esters. The evaluation indicated that:

1. glycidyl esters are processing-induced contaminants primarily found in refined fats and oils and foods containing fats and oils
2. experimental evidence indicates that glycidyl esters are substantially hydrolysed to glycidol in the gastrointestinal tract and elicit toxicity as glycidol
3. glycidol is a genotoxic compound and that there are no published collaboratively studied methods for the determination of glycidyl esters in complex foods

We look forward to participating in collaborative studies of methods for the determination of glycidyl esters in complex foods. Just like in other continents, people in Africa are at a risk of exposure to glycidyl esters through consumption of fats and oils such as refined palm oil, sunflower oil and rapeseed oil. There is the need to evaluate the extent of glycidyl esters contamination in oils and fats as well as fat and oil containing foods consumed in Africa. Thus, there is need to develop capacity for determination of glycidyl esters in foods.

3.1.2 3-MCPD esters

General comments

AU welcomes JECFA's evaluation of 3-Monochloro-1,2-propanediol (3-MCPD) esters. We note the following outcome of the evaluation:

1. 3-MCPD esters are processing-induced contaminants found in various refined oils and fats and are formed from acylglycerols in the presence of chlorinated compounds during deodorization at high temperature
2. Experimental evidence indicates that 3-MCPD esters are substantially hydrolysed to 3-MCPD in the gastrointestinal tract and elicit toxicity as free 3-MCPD
3. 3-MCPD was carcinogenic in two rat strains
4. The Committee established a group PMTDI of 4 µg/kg bw for 3-MCPD and 3-MCPD esters singly or in combination (expressed as 3-MCPD equivalents) (rounded to one significant figure)
5. There are no published collaboratively studied methods for the determination of 3-MCPD esters in complex foods

AU look forward to participating in collaborative studies of methods for the determination of 3-MCPD esters in complex foods. Just like in other continents, people in Africa are at a risk of exposure to 3-MCPD esters through consumption of fats and oils such as refined palm oil, sunflower oil and rapeseed oil. We need to evaluate the extent of 3-MCPD esters contamination in oils and fats as well as fat and oil containing foods consumed in Africa. Thus, there is need to develop capacity for determination of 3-MCPD esters in foods.

3.1.3: Sterigmatocystin

General comments

AU welcomes JECFA's evaluation of sterigmatocystin and notes the following outcomes of the evaluation:

1. Sterigmatocystin is genotoxic and carcinogenic, and the critical effect was determined to be carcinogenicity
2. For Africa, Sterigmatocystin data on occurrence in sorghum from Sudan, Mali, Ethiopia and Bukina Faso were used in the JECFA evaluation
3. Based on the available data the committee found highest exposure was estimated for the African Region
4. Contamination data were not enough for a complete exposure assessment.

Position: African Union requests the CCCF to develop a Code of Practice for Prevention and Reduction of Sterigmatocystin in Sorghum, as an Annex to the CoP for Prevention and Reduction of Mycotoxins in Cereals.

Rationale: Sterigmatocystin is a toxic fungal secondary metabolite (mycotoxin) that has been reliably reported to be produced by many fungal genera, including more than two dozen species each of Aspergillus and Emercella and one or more species of Bipolaris, Botryotrichum, Chaetomium (Botryotrichum, Humicola), Moelleriella, Monocillium, Moelleriella (Aschersonia), Podospora and a unique species of Penicillium, P. inflatum, closely related to A. tardus. The anamorphic names in parentheses are no longer in use.

JECFA evaluated sterigmatocystin at its 83rd session at the request of CCCF following availability of data on its occurrence in sorghum from Sudan, Mali, Ethiopia and Burkina Faso. Based on the available data, JECFA found highest exposure was estimated for the African Region. The Committee noted that these estimates, which are based only on adult populations and for which only one food commodity (sorghum) was considered, may indicate a human health concern. Overall, the Committee concluded that the data used for calculating the exposure had considerable limitations and consequently did not recommend any control measures for the toxins. However, considering the importance of sorghum as staple food in Africa it is advisable to take deliberate efforts to prevent and reduce sterigmatocystin contamination in sorghum, through a code of practice.

3.2 WHO Guidelines for drinking-water and health-related limits for certain substances in the standard for natural mineral waters (Codex Stan. 108-1981)

Position: AU supports realignment as proposed bearing in mind that some African countries are currently relying heavily on bottled natural mineral waters.

ICBWA

As an official CODEX NGO observer, the International Council of Bottled Water Associations (ICBWA) would like to comment on the Codex Committee on Contaminants in Foods (CCCF) regarding WHO Guidelines for drinking water quality and health related limits for certain substances in the Standard for Natural Mineral Waters (CODEXSTAN 108-2981).

Specifically, we request that no final action be taken on this issue at the 3-7 April 2017 meeting in Rio de Janeiro, Brazil.

The ICBWA wishes to contribute to, and provide expertise and knowledge on the review to be undertaken by the CCCF and the short comment period does not foster the discussion required. We request that an electronic working group be established to allow appropriate consideration of all the merits on this issue.

We look forward to hearing from Codex on the outcome of the CCCF meetings in Rio de Janeiro, Brazil.