CODEX ALIMENTARIUS COMMISSION E

Food and Agriculture Organization of the United Nations

World Health Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda Item 6 **CX/SCH 17/3/6**
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON SPICES AND CULINARY HERBS

3rd Session

Chennai, India, 6 -10 February 2017

PROPOSED DRAFT STANDARD FOR BLACK, WHITE, GREEN PEPPER (BWG PEPPER)

Prepared by the electronic working group led by India and co-chaired by Indonesia and Cameroon

(At Step 3)

Governments and interested international organizations are invited to submit comments on the **Draft Standard for BWG Pepper** at Step 3 **(Appendix I),** and the comments should be in writing in conformity with the Uniform Procedure for the Elaboration of Codex Standards and Related Texts (see *Procedural Manual of the Codex Alimentarius Commission*) to: India, the Secretariat of CCSCH, email ccsch@indianspices.com with a copy to the Codex Contact Point of India, (Food Safety and Standards Authority of India) Email: codex-india@nic.in and the Secretariat, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, e-mail:codex@fao.org **by 9 December 2016.**

Format for submitting comments: In order to facilitate the compilation of comments and prepare a more useful comments document, Members and Observers are requested to provide their comments in the format outlined in the **Appendix II** to this document.

Introduction

1. The second session of Codex Committee on Spices and Culinary Herbs (CCSCH2) held at Goa, India from 14 to 18 September, 2015, reviewed the proposal on the draft standard for Black, White and Green peppers (BWG Peppers) submitted to the session. Due to time constraint, CCSCH2 agreed to collect additional comments on each section of the proposed draft standard and that all comments collected (including the written comments submitted at CCSCH2) would be considered during redrafting of the document.

2. The Committee agreed to re-establish the eWG led by India and co-chaired by Indonesia and Cameroon, working in English only, to revise the proposed draft standard, (taking into account the discussions of CCSCH2, written comments submitted at CCSCH2 and relevant decisions regarding the format of other standards under discussions of CCSCH), for circulation for comments at Step 3 and consideration at its next session[1].

Summary of process

3. A total of 33 members consisting of 19 member countries and 3 observer organizations registered to participate in the working group. A list of the eWG members is attached as **Appendix III** to this Report.

4. The first draft standard on BWG Peppers was circulated to all participants on 27 February, 2016 with a deadline of 30 April 2016 and Nine (9) participating members provided comments.

5. Based on the comments on the first draft, the Second Draft was prepared and submitted to all participants on 27 May 2016.

6. Comments were received from five (5) member countries and one (1) observer organization, and based on these comments, the final report of this eWG was prepared.

Analysis of responses

7. Most of the members actively participated in the standard formulation process by providing comments on the circulated drafts.

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1 REP 16/SCH, paras 17-21

8. Five member countries and one observer member have given very active comments on the second draft.

9. Since some of the members have given different values on certain physical and chemical parameters on BWG Peppers, such values are given under [ ] and is submitted to the committee for final approval.

10. The submitted report contains the scope and the main aspects for setting the minimum quality requirements of the three forms of dried Peppers under three classes/grades that are intended for food production and for direct human consumption. In addition to this, a provision for unclassified/ungraded peppers is given for those peppers that are intended for further processing.

Conclusion and recommendations

11. The Committee is invited to consider the proposed draft as attached in **Appendix I,** with the view to progress it through the Codex step procedure.

APPENDIX I

PROPOSED DRAFT STANDARD FOR BLACK, WHITE AND GREEN (BWG) PEPPERS

1. SCOPE

This standard applies to dried or dehydrated peppers (Black, White and Green – abbreviated as BWG) fromberries of *Piper nigrum* L. of the *Piperaceae* family, offered for industrial food production and for direct consumption or for repacking if required. It excludes BWG peppers for industrial processing.

2. DESCRIPTION

2.1 Product Definition

(i) BWG peppers are the berries of *Piper nigrum* L. having reached appropriate degree of development and/or maturity for the intended product purpose.

(a) Black pepper – obtained from dried berries having unbroken pericarp.

(b) White pepper – obtained from dried berries after removing the pericarp.

(c) Green pepper – obtained from green berries by removal of moisture under controlled conditions.

Berries are treated in an appropriate manner to obtain the above products, by undergoing operations such as threshing, sieving and sifting, soaking, washing, blanching, drying or dehydrating, decorticating, grading, crushing and grinding before the final packaging and storage.

2.2 Styles

BWG peppers may be offered in one of the following styles:

(a) Whole/intact

(b) Cracked/crushed – broken into two or more pieces.

(c) Ground – processed into powders.

2.3 Varietal Types

Any commercially cultivated variety (cultivar) of *Piper nigrum* L. suitable for processing.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

Product as defined in Section 2.

3.2 Quality Factors

The Quality factors for Black, White and Green peppers are determined based on the physical and chemical characteristics, as given below.

3.2.1 Physical characteristics

The basic parameters for whole BWG Peppers is given in Table 1 below.

Table 1. Basic parameters for BWG peppers*

Basic parameter	Black pepper	White pepper	Green pepper
General size for whole BWG peppers	Diameter 2.5 – 7.0 mm (approx.)	Diameter 2.0 - 6.0 mm (approx.)	Diameter 2.0-6.0 mm (approx.)
Shape for whole BWG peppers	Whole with globular shape and wrinkled pericarp.	Whole with globular shape with smooth surface, slightly flattened at one pole and a small protuberance at the other.	Whole with globular shape with or without wrinkled pericarp.
Color for all forms	Brownish to dark brownish, blackish color. Free from added coloring.	Matt grey to brownish to pale ivory white. Free from added coloring.	Characteristic green, greenish or dark greenish Free from added coloring.
Sensory property for all forms	The flavour shall have a penetrating odour and hot, biting pungent taste characteristics of black pepper excluding mouldy and rancid odours. The product shall be free from	The odour and flavour shall be characteristic of white pepper, slightly sharp and very aromatic, excluding mouldy and rancid odours.	Pungent odour and flavour characteristic of green pepper, free from rancidity, mustiness, bitter taste and extraneous flavour. The product shall be free from

	foreign odours, flavours and free from any other harmful substances.	The product shall be free from foreign odours, flavours and free from any other harmful substances.	foreign odours, flavours and free from any other harmful substances.

*For all classes and grades including unclassified / ungraded

3.2.2 Infestation

Classified/Graded BWG peppers shall be free from live insects and practically free from dead insects, insect fragments and rodent contamination visible to naked eye (corrected, if necessary, for abnormal vision)

3.2.3 Classification

BWG Peppers may be traded under three classes/grades (intended for direct consumption/industrial food production) according to physical and chemical requirements as specified in table 2, 3 and 4.

(a) Class I /Grade I

(b) Class II/Grade II

(c) Class III/Grade III

When unclassified/ ungraded (intended for further processing) the provisions for Class III requirements apply as the minimum requirements, except that of Table 3. In the place of Table 3, Table 2 is applicable.

Table 2. Physical characteristics for BWG whole peppers (unclassified/ungraded)

Physical characteristics	**Requirements**		
	Black	**White**	**Green**
Bulk density, (g/l), min.	[400] [450]	[400] [550] [600]	NA
Light berries[1]*, % (m/m), max.	10.0	[2.0] [3.0]	NA
Extraneous matter[2]*, % (by wt), max.	[1.0] [2.0]	[1.0] [2.0]	[1.0] [2.0]
Foreign matter[3]*, % (by wt), max.	0.5	0.5	0.5
Black and other colored berries/corns, % (by wt), max.	[5 green, 1 white] [Nil]	[5 black, 2 green][Nil]	[10 black, 5 white] [Nil]
Mouldy Berries /Corns, % (by wt), max.	[1.0] [3.0] [5.0]	[1.0] [3.0] [5.0]	[1.0] [3.0] [5.0]
Insect defiled berries /Corns, % (by wt), max.	[2.0] [3.0]	[2.0] [3.0]	[2.0] [3.0]
Mammalian or/and other excreta, (by mg/kg), max.	[Nil] [2.0]	[Nil] [2.0]	[Nil] [2.0]
Pinheads[4]* or broken berries, % (m/m), max.	[2.0] [4.0]	[2.0] [4.0]	[1.0] [4.0]
Live or/and dead insects and pests, % (by count) ,max.	[Nil] [2.0]	[Nil] [2.0]	[Nil] [2.0]

NA – NOT APPLICABLE

[1]* Light berries (in Black and White peppers only) - Generally immature berries without kernel with an apparent density lower than 0.30g/mL or 300 g/L

[2]* Extraneous matter - All vegetable matter from the specific plant other than the required part.

Light berries, pinheads or broken berries are not considered as extraneous matter.

[3]* Foreign matter - Any visible and/ or apparent matter or material not usually associated with the product.

*4 Pinheads - Unfertilized berries with a diameter of less than 2 mm with more angularity than normal berries, they have soft texture (collapse under heavy pressure) and have less odour and flavour than pepper berries.

Table 3. Physical characteristics for BWG whole peppers (classified/graded)

Physical characteristics	Requirements								
	Black			White			Green		
	Class I/ Grade I	Class II/ Grade II	Class III/ Grade III	Class I/ Grade I	Class II/ Grade II	Class III/ Grade III	Class I/ Grade I	Class II/ Grade II	Class III/ Grade III
Bulk density, (g/l), min.	550	500	450	600	600	[550][600]	NA	NA	NA
*1 Light berries, % (m/m) max.	2.0	5.0	10.0	1.0	2.0	2.0	NA	NA	NA
*2 Extraneous matter, % (m/m), max.	1.0	[1.0] [2.0]	[1.0] [2.0]	[1.0][0.8]	[1.0] [1.5]	[1.0] [2.0]	[0.5] [1.0]	1.0	[1.0][1.2]
*3 Foreign matter, % (m/m), max.	Nil	0.5	0.5	Nil	0.5	0.5	Nil	0.5	0.5
Black berries/corns % (m/m), max.	NA	NA	NA	5.0	7.5	10.0	Nil	Nil	5.0
Broken berries, % (m/m), max.	NA	NA	NA	2.0	3.0	3.0	1.0	[3.0] [7.0]	[4.0][10.0]
Mouldy Berries/Corns, % (m/m), max.	[1.0] [Nil]	[1.0][2.0] [3.0]	[1.0] [2.0] [3.0]	[1.0] [Nil]	[1.0] [2.0] [3.0]	[1.0] [2.0] [3.0]	Nil	1.0	[1.0] [2.0]
Insect defiled berries /Corns, % (m/m), max.	[1.0] [0.5]	[1.0] [2.0]	[1.0][1.5][2.0]	[1.0] [0.5]	[1.0] [2.0]	[1.0] [1.5][2.0]	[Nil] [0.5]	1.0	[1.0] [1.5] [2.0]
Mammalian or/and other excreta, (mg/kg), max.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
*4 Pinheads and /or broken berries for black pepper, % (m/m), max.	[Nil] [1.0]	2.0	[3.0] [4.0]	NA	NA	NA	NA	NA	NA

3.2.4 Chemical characteristics

Table 4. Chemical characteristics for BWG whole peppers

(The requirements for unclassified /ungraded is same as class III/grade II)

Chemical characteristics	Requirements						
	Black			White			Green
	Class I/ Grade I	Class II/ Grade II	Class III/ Grade III	Class I/ Grade I	Class II/ Grade II	Class III/ Grade III	
Moisture content, % (m/m), max.	12.0	[12.0][12.5][13.0]	[12.0][13.0]	12.0	[12.0][13.0]	[12.0][13.0][14.0]	[9.0][12.0]
Total ash, % (m/m), max, on dry basis.	6.0	7.0	7.0	3.5	[3.5][4.0]	[3.5][4.0]	5.0
Nonvolatile ether extract, % (m/m) min, on dry basis.	7.0	7.0	[6.0] [7.0]	6.0	6.0	6.0	0.3
Volatile oils[1], % (ml/100 g) min, on dry basis.	2.0	[1.5][2.0]	[1.0][2.0]	1.5	1.5	1.0	1.0
Piperine content, % (m/m), min, on dry basis.	[3.5][4.0]	[3.0][3.5][4.0]	[2.0][3.0]	4.0	[3.5][4.0]	[3.0]	NA
Acid-insoluble ash, % (m/m) max, on dry basis.	1.5	1.5	1.5	0.3	0.3	0.3	0.3

NA – NOT APPLICABLE

Table 5. Chemical characteristics for BWG ground peppers

Chemical characteristics	Requirements	
	*Ground black pepper	*Ground white pepper
Moisture content, % (m/m), max.	[12.0] [13.0]	[12.0] [13.0]
Total ash by mass, % (m/m), on dry basis, max.	[6.0]	[3.0] [3.5]
Non-volatile ether extract, % (m/m) ,on dry basis, min.	6.0	6.0
Volatile oil[1] , % (ml/100g), on dry basis, min.	[0.7] [1.0]	[0.4] [0.7]
Crude fiber, insoluble index, % (m/m) on dry basis, max.	17.5	6.5
Piperine, % (m/m), on dry basis, min.	[1.5][3.5] [4.0]	[2.0][4.0]
Acid insoluble ash, % (m/m) on dry basis, max.	1.2	0.3
*Ground peppers include all its forms as per 2.2(b).		

[1]The volatile oil content should be determined immediately after grinding

3.3 Classification of “Defectives”

A container sample that fails to meet one or more of the applicable quality requirements, as set out in Section 3.2 (except those based on sample averages) should be considered as a “defective”.

3.4 Lot Acceptance

A lot should be considered as meeting the applicable quality requirements referred to in Section 3.2 when the number of “defectives”, as defined in Section 3.3, does not exceed the acceptance number (c) of the appropriate sampling plan, as described in Section 10.2. For factors evaluated on a sample average, a lot will be considered acceptable if the average meets the specified tolerance, and no individual sample is excessively out of tolerance.

4. FOOD ADDITIVES

Table 6 - Food Additive

Food Additive	Black Peppers	White Peppers	Green Peppers
Sulphur dioxide, (Chemical Abstract Service number - INS number 220	Not Applicable	Not Applicable	* 150 (mg/kg), max.
Technological Justification – as "preservative"			
* As per CODEX STAN 192- 1995 for food category 12.2.1 (herbs &spices) sulfites content ,including sulphur dioxide (i.e. INS 220-225-227- 228 and INS 539)			

4.1 The flavourings used in products covered by this standard should comply with the Guidelines for the use of flavourings (CAC/GL 66-2008).

4.2 Processing aids used in products covered by this standard shall comply with the *Guidelines on substances used as processing aids (*CAC/GL 75-2010).

5 CONTAMINANTS

5.1 The products covered by this Standard shall comply with the maximum levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CODEX STAN 193-1995).

5.2 The products covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6. FOOD HYGIENE

6.1 It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of General *Principles of Food Hygiene* (CAC/RCP 1-1969), the *Code of Hygienic Practice for Spices and Dried Aromatic Herbs* (CAC/RCP 42-1995) and other relevant Codex texts, such as codes of hygienic practice and codes of practice.

6.2 The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria for Foods* (CAC/GL 21-1997).

7. WEIGHTS AND MEASURES

Containers shall be as full as practicable without impairment of quality and shall be consistent with a proper declaration of contents for the product.

8. LABELLING

8.1 The products covered by the provisions of this Standard shall be labelled in accordance with the General *Standard for the Labelling of Pre-packaged Foods* (CODEX STAN 1- 1985) In addition, the following specific provisions apply:

8.2 Name of the Product

8.2.1 The name of the product shall be "Black Pepper", "White Pepper" or "Green Pepper", in dried or dehydrated forms.

8.2.2 The nature of the product may include an indication of the style as described in Section 2.2.

8.2.3 Origin of produce: country of origin and optionally name of regional, local place of production/trade.

8.2.4 Commercial Identification

- Class/ Grade/Unclassified or Ungraded
- Size (optional)
- Variety (optional)
- Net weight

8.2.5 Inspection mark (optional)

8.3 Labelling of Non-Retail Containers

Information for non-retail containers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container. However, lot identifi-

cation, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of Analysis

Table 7. Methods of Analysis

Provision	Method	Principle	Type
Extraneous matter	ISO 927:2009	Visual examination	IV
Light berries	ISO 959-1:1998	Flotation	IV
Pinheads or broken berries	Physical separation and weighing. ISO 959-1:1998	Visual examination	IV
Bulk density	ISO 959-1:1998 and 959-2:1998	Separation by density	IV
Broken berries	Physical separation and weighing. ISO959-2:1998	Visual examination	IV
Black berries	Physical separation and weighing. ISO959-2:1998	Visual examination	IV
Moisture content	AOAC Official methods-986.21/ ISO 939:1980	Distillation	I
Total ash	AOAC Official methods-941.12/ ISO 928:1997	Gravimetry	I
Volatile oils	AOAC Official methods-962.17/ ISO 6571:2008	Distillation	I
Non-volatile ether extract	ISO 1108 AOAC Official methods-940.29	Soxhlet extraction	I
Piperine content	AOAC Official methods-987.07/ ISO 5564	Spectrophotometry	I
Acid-insoluble ash	AOAC Official methods-941.12/ ISO 930:1997	Gravimetry	I
Crude fiber	AOAC Official methods-920.169/ISO 5498	Gravimetry	I
Sulphur dioxide	ISO 5522/ Codex Adopted AOAC Method 1995 (AOAC 990.31)	Titrimetric/Ion Exclusion Chromatography method	I/III
Mammalian and/or other excreta	AOAC 993.27	Visual examination	IV
Filth in spices (Insect and Rodent)	ISO 1208 : 1982, AOAC 965.40	Flotation	IV
Light filth in Black and White Pepper	AOAC 972.40 and 977.24	Flotation	IV
Preparation of test sample for laboratories	AOAC 920.164/ ISO 2825-1981	NA	NA

9.2 Sampling Plans

9.2.1 Sampling plans are developed depending on the appropriate inspection level

9.2.2 Separate sampling plan for different levels of inspection (1and 2) are given under Table 8 and 9

Sampling Plans	
The appropriate inspection level is selected as follows:	
Inspection level I	Normal Sampling
Inspection level II	Disputes (Codex referee purposes sample size),enforcement or need for better lot estimate

9.2.3 Detailed below as Table 8 and Table 9

Table 8. Sampling Plan 1 (Inspection Level I, AQL = 6.5)

NET WEIGHT IS EQUAL TO OR LESS THAN 1KG (2.2LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
4,800 or less	6	1
4,801 - 24,000	13	2
24,001 - 48,000	21	3
48,001 - 84,000	29	4
84,001 - 144,000	38	5
144,001 - 240,000	48	6
more than 240,000	60	7
Net Weight Is Greater Than 1 Kg (2.2 Lb) But Not More Than 4.5 Kg (10 Lb)		
Lot Size (N)	Sample Size (n)	Acceptance Number (c)
2,400 or less	6	1
2,401 - 15,000	13	2
15,001 - 24,000	21	3
24,001 - 42,000	29	4
42,001 - 72,000	38	5
72,001 - 120,000	48	6
more than 120,000	60	7
Net Weight Greater Than 4.5 Kg (10 Lb)		
Lot Size (N)	Sample Size (n)	Acceptance Number (c)
600 or less	6	1
601 - 2,000	13	2
2,001 - 7,200	21	3
7,201 - 15,000	29	4
15,001 - 24,000	38	5
24,001 - 42,000	48	6
more than 42,000	60	7

Table 9. Sampling Plan 2 (Inspection Level II, AQL = 6.5)

NET WEIGHT IS EQUAL TO OR LESS THAN 1KG (2.2 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
4,800 or less	13	2
4,801 - 24,000	21	3
24,001 - 48,000	29	4
48,001 - 84,000	38	5
84,001 - 144,000	48	6
144,001 - 240,000	60	7
more than 240,000	72	8
NET WEIGHT IS GREATER THAN 1 KG (2.2 LB) BUT NOT MORE THAN 4.5 KG (10LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
2,400 or less	13	2
2,401 - 15,000	21	3
15,001 - 24,000	29	4
24,001 - 42,000	38	5
42,001 - 72,000	48	6
72,001 - 120,000	60	7
more than 120,000	72	8
NET WEIGHT GREATER THAN 4.5 KG(10LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
600 or less	13	2
601 - 2,000	21	3
2,001 - 7,200	29	4
7,201 - 15,000	38	5
15,001 - 24,000	48	6
24,001 - 42,000	60	7
more than 42,000	72	8

APPENDIX II

GENERAL GUIDANCE FOR THE PROVISION OF COMMENTS

In order to facilitate the compilation and prepare a more useful comments' document, Members and Observers, which are not yet doing so, are requested to provide their comments under the following headings:

(i) General Comments

(ii) Specific Comments

Specific comments should include a reference to the relevant section and/or paragraph of the document that the comments refer to.

When changes are proposed to specific paragraphs, Members and Observers are requested to provide their proposal for amendments accompanied by the related rationale. New texts should be presented in underlined/bold font and deletion in ~~strikethrough font~~.

In order to facilitate the work of the Secretariats to compile comments, Members and Observers are requested to refrain from using colour font/shading as documents are printed in black and white and from using track change mode, which might be lost when comments are copied / pasted into a consolidated document.

In order to reduce the translation work and save paper, Members and Observers are requested not to reproduce the complete document but only those parts of the texts for which any change and/or amendments is proposed.

APPENDIX III

LIST OF PARTICIPANTS under eWG on BWG PEPPERS

SL NO	COUNTRY	PARTICIPANTS NAME	ADDRESS	EMAIL ID
1	Argentina	Ing. Agr. Maria Florencia Damarco	Argentina Servicio Nacional de Sanidady Calidad Agroalimentaria (SENASA)	fdemarco@senasa.gov.ar codex@magyp.gob.ar
2	Brazil	Andre Luiz Bispo Oliveria	Standards Division Officer Ministry Of Agriculture, Livestock And Food Supply, Esplanada Dos Ministérios, Bloco D, Sala 336b, Brasilia 70043-900, Brazil	andre.oliveira@agricultura.gov.br
3	Cameroon	**Ebai Takang Stephen (Co-Chair)**	National Laboratory For Agricultural Products And Inputs.	stephen.ebai@yahoo.com
4	Canada	Kevin Smith	National Manager, Standards of identity, Composition and Grades Canadian Food Inspection Agency	Kevin.Smith@inspection.gc.ca
5	Chile	Constanza Miranda	Co-ordinator, National Committee CCSCH	constanza.miranda@achipia.gob.cl
6	European Union	Bernadette Klink-Khachan	European Union Codex Contact Point European Commission Health and Food Safety Directorate-General Unit G6: Multilateral International Relations	sante-codex@ec.europa.eu
7	Greece	Papanastasiou Danai	Scientific Officer, Hellenic Food Authority – EFET, Nutrition Policy And Research Directorate	dpapanastasiou@efet.gr codex@efet.gr
8	India	**G Venugopal (Chair)**	Scientist ,Quality Evaluation Lab, Spices Board, Kochi – 682025, India	venuspices@gmail.com, ccsch.venu@gmail.com
9	Indonesia	**S. Joni Munarso (Co-Chair)**	Principle Researcher Indonesia Agency for Agricultural Research and Development, Ministry of Agriculture, Republic of Indonesia.	joni_munarso@yahoo.co.id codex_indonesia@bsn.go.id jomunarso@gmail.com
10	Iran	Iman Nick Ayin	Agricultural MSC, horticultural trends Standard Official Expert Assistant Prof . of Alzahra University & Secretary of CCSCH in Iran Institute of Standards and Industrial Research of Iran	nikan9394@gmail.com
		Fakhrisadat Hosseini	Technical Manager of Novin Saffron Company & Member of CCSCH in Iran	sadat77@gmail.com
		Hamideh Nikbin	Head of Agrofood industry Department Ministry of Agriculture.	Sa.nikbin@yahoo.com
		Arasteh Alimardani	Head of fruits ,vegetables & spices , Food & Drug Reference Control Laboratories-Food & Drug Organization(FDO),MOH	qc@novinsaffron.com
		Mohsen Bostani		m_bostani_f@yahoo.com
11	Japan	Keiji Momono	Assistant director Food Manufacture Affairs division Food Industry Affairs Bureau Ministry of Agriculture, Forestry	keiji_momono850@maff.go.jp

			and fisheries of Japan	
		Naomi Saito	Assistant Food manufacture Affairs Division Food Industry Affairs Bureau Ministry of Agriculture, Forestry and Fisheries of Japan	mailto:naomi_saito740@maff.go.jp naomi_saito740@maff.go.jp codex_maff@maff.go.jp
12	Malaysia	Ruhana Abdul Latif	Principal Assistant Director, Food Safety And Quality Division, Ministry Of Health, MalaysiaAssistant directorFood commodity and Labeling SectionFood safety and Quality DivisionMinistry of Health, Malaysia	ruhana_latif@moh.gov.my
		Nurul Syuhada	Assistant director, Food commodity and Labelling Section	syuhada.mbasri@moh.gov.my
		Mohamad Basri	Food safety and Quality Division, Ministry of Health, Malaysia	ccp_malaysia@moh.gov.my
13	Morocco	Layachi Najib	Expert in Moroccan spice association	playachi@gmail.com
14	Nigeria	Fyne Okita Uwemedimo	Senior Officer, Standards Organisation of Nigeria	fyne.okita@gmail.com fyne.okita@son.gov.ng codexsecretariat@son.gov.ng megesciett@yahoo.com
15	Republic Of Korea	Korean Contact point	Ministry of Food and Drug safety	codexkorea@korea.kr
		Eun-kyung Hong	Codex Researcher, Ministry of Food and Drug safety	hongek3@korea.kr
		Hyochin Kim	Scientific officer Ministry of Food and Drug Safety	hckim77@korea.kr
16	Spain	Sara López-Varela Celdrán	Senior Technician. Head Of Unit Confectionery Condiments And Additives, Spanish Agency For Consumer Affairs, Food Safety And Nutrition.	sara.lopez@consumo-inc.es
17	Switzerland	Franziska Franchini	Scientific Officer, Federal Food Safety and Veterinary Office FSVO,Switzerland	franziska.franchini@blv.admin.ch
18	Thailand	Kunsiri Viengvisas	Standards Officer, Office Of Standard Development, National Bureau Of Agricultural Commodity And Food Standards, 50 Phaholyothin Road, Ladyao, Chatuchak, Bangkok – 10900, Thailand	codex@acfs.go.th , pupu_077@hotmail.com prateep_ming@hotmail.com
19	United States of America	Dorian Lafond	US Delegate to CCSCH International standards coordinator USDA/Agricultural Marketing Service	dorian.lafond@ams.usda.gov
		George Ziobro	US Delegate to CCSCH Research Chemist FDA- Office of Food Safety	George.Ziobro@fda.hhs.gov -
		Marie Maratos	US Delegate to CCSCH International Issues Analyst U.S Codex office U.S Department of Agriculture	marie.maratos@fsis.usda.gov
20	Food Drink	Patrick Fox	Manager Food Policy, Science	p.fox@fooddrinkeurope.eu

	Europe		and R&D	
21	IOSTA	Cheryl Deem	Secretariat	cdeem@astaspice.org
22	IPC	WDL. Gunaratne	ED, IPC	ed@ipcnet.org