



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX COMMITTEE ON SPICES AND CULINARY HERBS**

2<sup>nd</sup> Session

Goa, India, 14 - 18 September 2015

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

**Comments at Step 3**

Prepared by an electronic Working Group Chaired by India, and co-chaired by Cameroon and Indonesia, with the assistance of: Australia, Brazil, Canada, Chile, China, Cyprus, European Union, Ghana, Greece, Iran, Japan, Malaysia, Mexico, Norway, Papua New Guinea, Poland, Republic of Korea, Russia, Spain, Sri Lanka, Thailand, United States of America, ISO, IPC<sub>2</sub>, Food Drink Europe, IADSA, IOSTA, United States Pharmacopoeial Convention (USP))

Governments and international organizations in Observer status with the Codex Alimentarius Commission wishing to submit comments at Step 3 on the Draft Standard (**Annex I**) are invited to do so no later than **31 July 2015** as follows: Secretariat, Spices Board (Ministry of Commerce & Industry, Government of India), Email: [ccsch@indianspices.com](mailto: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](mailto:codex-india@nic.in) and the Secretariat, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, e-mail: [codex@fao.org](mailto:codex@fao.org) .

**Format for submitting comments:** In order to facilitate the compilation of comments and prepare a more useful comments document, Members and Observers, which are not yet doing so, are requested to provide their comments in the format outlined in the Annex 2 to this document.

**Introduction**

1. The first session of Codex Committee on Spices and Culinary Herbs (CCSCH) held at Kochi, India during 11 -14 February 2014, agreed to the proposal of the Working Group on new work on the development of a Standard for black, white and green pepper (BWG Pepper) and to submit the project document to CAC37 for approval. The Committee agreed to establish, subject to the approval of the Commission, an electronic Working Group (EWG), led by India and co-chaired by Cameroon and Indonesia and working in English only, to prepare the proposed draft standard for circulation for comments at Step 3 and consideration at its next Session.
2. CAC37, held at Geneva Switzerland during 14-18 July 2014, approved the new work and requested CCSCH to consider broadening the scope of the new work to include other types of pepper berries (peppercorn), such as red pepper.<sup>2</sup>

**Summary of process**

3. 26 member countries and 6 observer organizations registered to participate in the EWG.
4. The first draft standard on BWG Peppers was circulated to all participants on 24<sup>th</sup> July 2014 and the combined comments on the first draft was prepared and submitted along with the second draft standard on 30<sup>th</sup> October 2014.
5. Based on the comments received on the second draft standard, the same was revised and submitted on 30<sup>th</sup> January 2015 as the final report to the Codex secretariat.
6. To consider expanding the Scope of work on BWG Peppers by including other forms of peppers under the EWG on Peppers. The decision was based on the request from Columbia supported by EU at the 37th

<sup>1</sup> REP14/SCH paras 62-63 and Appendix II.

<sup>2</sup> REP14/CAC, para. 98 and Appendix VI.

CAC Session held in Geneva during July 2014. As per the suggestion from EWG members, it is submitted to review the possibility to treat other species of Peppers of regional trade in their respective Regional committee, if it possible. The final report and the draft standard for BWG are attached as Annex I for circulation for comment at Step 3 and consideration at the next session of CCSCH.

### **Analysis of responses**

7. Based on CAC37 request to broaden the scope of the new work, the draft was modified and circulated to members. Most of them agreed that the scope should be only for *Piper nigrum* L. They have a common concern to get comment from CCSCH2 whether it is possible to consider other species of pepper for regional trade in Regional committee, under a different regional standard.

8. 14 members gave very active comments on the second draft, with most members giving specific values on physical and chemical parameters of BWG Peppers. In order to resolve the comments related to physical and chemical parameters, the Chair opted for a mean of the proposed value where ever agreeable.

9. The submitted report contains the scope and the main aspects for setting the minimum quality requirements of the three commercial forms of Peppers intended for food processing and for direct human consumption.

### **Conclusion**

10. Based on the comments received from members the second draft standard is submitted for comments at step 3.

### **Recommendations from EWG members**

11. The EWG invites members and observers to provide comments on the proposed draft.

**PROPOSED DRAFT STANDARD FOR BLACK, WHITE AND GREEN (BWG) PEPPER****N04-2014****(At Step 3 of the Procedure)****1. SCOPE**

This standard applies to three commercial forms of Pepper (Black, White and Green – abbreviated as BWG) from harvested berries of *Piper nigrum* L of the Piperaceae family. This standard applies to dried or dehydrated peppers intended for food processing and for direct human consumption, including for catering purposes or for retailing. It does not apply to the product when indicated as being intended for further processing.

**2. DESCRIPTION****2.1 Product Definition**

- a) BWG Peppers are the processed fruits or berries of *Piper nigrum* L. having reached appropriate degree of development and/or maturity for the intended product purpose.
  - i. Black pepper – obtained from mature dried fruits or berries
  - ii. White pepper – obtained from fully mature or ripe fruits or berries, their outer pericarp removed
  - iii. Green pepper – Obtained from immature or mature green pepper fruits or berries prepared under controlled conditions.
- b) Fruits or Berries are processed in an appropriate manner, by undergoing operations such as threshing, decorticating, cleaning, soaking, washing, drying or dehydrating, grinding, crushing, sieving and sifting; before the final packaging and storage.

**2.2 Styles**

BWG peppers may be offered in one of the following styles

- a. Whole- intact whole dried or dehydrated BWG berries
- b. Cracked /crushed – cracked/crushed BW pepper berries that are retained sieve of a nominal aperture size of 500 µm.
- c. Ground - ground BW pepper berries that will pass completely through a sieve of nominal aperture size 500 µm

**2.3 Varietal Types**

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

**2.4 Trade Classes/Grades:**

In accordance with the Physical and Chemical Characteristics in sections 3.2.4– 3.2.6 BWG pepper are classified into the following three classes/grades:

Class/Grade I

Class/Grade II

Class/Grade III

**2.5 Definitions (for Terms Used Under 3.2.4 of Table 2)****2.5.1 Extraneous matter.**

All materials other than Pepper berries, irrespective of vegetative parts (stem, leaves etc) or minerals (soil, sand) origin. Light berries, pinheads or broken berries are not considered as extraneous matter.

**2.5.2 Light berries**

Generally immature berries without kernel with an apparent density lower than 0.30g/mL. [300 g/L]

**2.5.3 Pin heads**

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

### 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

#### 3.1 Composition

Product as defined in Section 2.

#### 3.2 Quality Factors

The Quality factors for whole Black, White and Green Peppers are given below in Table shown as 1, 2 and 3.

**Table 1: BASIC PARAMETERS OF BWG PEPPERS**

SECTION N	BASIC PARAMETER	BLACK PEPPER (All forms)	WHITE PEPPER (All forms)	GREEN PEPPER (All forms)
3.2.1	General Size/ Shape	Whole dried Black pepper berries shall be unbroken with wrinkled pericarp. Diameter 2.5 – 7.0 mm (approx.) and in Globular shape.	Whole dried White pepper berries shall be smooth surface, slightly flattened at one pole and small protuberance at the other. Diameter 2.0 - 6.0 mm (approx.) and in Globular shape. Spherical shape.	Whole dried Green Pepper berries shall be unbroken, with or without wrinkled pericarp. Diameter 2.0-6.0 mm (approx.) and in Globular shape.
3.2.2	Colour	Brownish to dark brownish, greyish or blackish colour and free from added colouring.	Matt grey to brownish to pale ivory white and free from added colouring.	Characteristic green, greenish or dark greenish and free from added colouring.
3.2.3	Sensory property	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 foreign odours, flavours and free from any other harmful substances.	The odour and flavour shall be characteristic of White Pepper, slightly sharp and very aromatic, excluding mouldy and rancid odours. The product shall be free from foreign odours, flavours and free from any other harmful substances.	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.

Black and White peppers are graded into 3 grades (Grade I, Grade II, Grade III) based on the physical and chemical characteristics after processing at appropriate levels.

**Table 2. Physical Characteristics of BWG whole Peppers**

Physical Characteristics	REQUIREMENTS								
	Black			White			Green		
	Class/ Grade I	Class/ Grade II	Class/ Grade III	Class/ Grade I	Class/ Grade II	Class/ Grade III	Class/ Grade I	Class/ Grade II	Class/ Grade III
Bulk density, ( g/l ), min.	550	500	450	600	600	600	NA	NA	NA
Light berries, % (m/m) max.	2	5	10	1	2	2	NA	NA	NA
Extraneous matter, % (m/m) max.	1	2	2	1	1.5	2	0.5	1	1.2
Black berries/corns % (by wt), max	NA	NA	NA	5	7.5	10	Nil	Nil	5
Broken berries, % (by wt.), max.	NA	NA	NA	2	3	3	1	7	10
Mouldy Berries /Corns % (by wt), max.	1	3	3	1	3	3	Nil	1	2
Insect defiled berries /Corns	1	2	2	1	2	2	Nil	1	2

Physical Characteristics	REQUIREMENTS								
	Black			White			Green		
	Class/ Grade I	Class/ Grade II	Class/ Grade III	Class/ Grade I	Class/ Grade II	Class/ Grade III	Class/ Grade I	Class/ Grade II	Class/ Grade III
% (by wt), max.									
Whole insects , Dead or/and Alive (by count), max.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Mammalian or/and Other excreta by (mg/kg), max.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Pinheads or broken berries, % (m/m) max.	1	2	4	NA	NA	NA	NA	NA	NA

NA – NOT APPLICABLE

Table 3. Chemical Characteristics of BWG whole Peppers

Chemical Characteristics	REQUIREMENTS						
	Black			White			Green
	Class/Grade I	Class/Grade II	Class/Grade III	Class/Grade I	Class/Grade II	Class/Grade III	
Moisture content, % (m/m) max.	12.0	13.0	14.0	12.0	13.0	14.0	12.0
Total ash% (m/m) max, on dry basis.	6.0	7.0	7.0	3.5	4.0	4.0	5.0
Non volatile ether extract, % (m/m) min, on dry basis.	7.0	7.0	6.0	6.0	6.0	6.0	0.3
Volatile oils <sup>1</sup> , % (ml/100 g) min, on dry basis.	2.0	1.5	1.0	1.5	1.5	1.0	NA
Piperine content, % (m/m), min on dry basis.	3.5	3.0	2.0	4.0	3.5	3.0	NA
Acid-insoluble ash, % (m/m) max, on dry basis.	1.5	1.5	1.5	0.3	0.3	0.3	NA
Sulphur dioxide, % m/m (mg/kg),max	NA	NA	NA	NA	NA	NA	500
*Salt content % (m/m), max	NA	NA	NA	NA	NA	NA	3.0

NA – NOT APPLICABLE

\* Specific to Green Pepper product.

Table 4. Chemical Characteristics of BW Ground Peppers

Chemical Characteristics	*Ground Black pepper	*Ground White pepper
Moisture content % m/m, max.	12.0	13.0
Total ash by mass, % (m/m), on dry basis, max.	6.0	3.5
Non volatile ether extract % (m/m) on dry basis, min.	6.0	6.0
Volatile oil <sup>1</sup> % (ml/100g), on dry basis, min.	1.0	0.7
Crude fiber, insoluble index, % (m/m) on dry basis, max.	17.5	6.5

<b>Chemical Characteristics</b>	<b>*Ground Black pepper</b>	<b>*Ground White pepper</b>
Piperine % (m/m), on dry basis, min	3.5	4.0
Acid insoluble ash % (m/m) on dry basis, max.	1.2	0.3
<b>*Ground peppers include all its forms as per 2.2(b).</b>		

**<sup>1</sup>The volatile oil content should be determined immediately after grinding**

### **3.3 Classification of “Defectives”**

The lot sample that fails to meet one or more of the applicable quality requirements, as set out in Section 3.2 should be considered as “defective lot”.

### **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 11. 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**

4.1 No food additives or flavouring are permitted in the products covered by the standard.

## **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 the *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.

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

6.3 All the process should be performed in a manner that does not compromise the quality or safety of the product (CODEX STAN 1 – 1985).

## **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. MARKING OR 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 freeze 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

- Grade (optional for ground forms)
- Size (optional for ground forms)

- Variety (optional for ground forms)
- 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 identification, 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. PACKAGING AND STORAGE

The materials used inside the package must be new, clean, food-grade quality and to avoid causing any external or internal damage to the produce. It must protect the product quality and safety during transport and storage. To avoid condensation, a container that is permeable to air shall be used for packing and storing bulk material. Bulk materials should be stored in a clean dry, ventilated room, free from infestation and not exposed to direct sunlight

## 10. METHODS OF ANALYSIS AND SAMPLING

### 10.1 Methods of Analysis

Table 5

Provision	Method	Principle	Type
Extraneous matter, % (m/m) max	ISO 927:2009	Visual examination	IV
Light berries, % (m/m) max.	ISO 959-1:1989	Flotation	IV
Pinheads or broken berries, % (m/m) max.	Physical separation and weighing. ISO 959-1:1989	Visual examination	IV
Bulk density, g/l, min.	ISO 959-1:1989 and 959-2:1998	Separation by density	IV
Broken berries, % (m/m) max.	Physical separation and weighing. ISO959-2:1998	Visual examination	IV
Black berries, % (m/m) max.	Physical separation and weighing. ISO959-2:1998	Visual examination	IV
Moisture content, % (m/m) max.	AOAC Official methods-986.21/ ISO 939:1980	Distillation	I
Total ash % (m/m) max.on dry basis.	AOAC Official methods-941.12/ ISO 928:1997	Gravimetry	I
Volatile oils % (ml/100 g) min, on dry basis.	AOAC Official methods-962.17/ ISO 6571:2008	Distillation	I
Non-volatile ether extract (m/m) % min., on dry basis.	ISO 1108 AOAC Official methods-940.29	Soxhlet extraction	I
Piperine content % (m/m) min.	AOAC Official methods- 987.07/ ISO 5564	Spectrophotometric	I
Acid-insoluble ash, % (m/m) max on dry basis.	AOAC Official methods-941.12/ ISO 930:1997	Gravimetry	I
Crude fiber, insoluble index % (m/m) max on dry basis.	AOAC Official methods-920.169/ISO 5498	Gravimetry	I
Sulphur dioxide% (m/m), or in ppm (mg/kg), max.	ISO 5522	Titrimetric	I
Mammalian excreta in ground Black	AOAC 993.27	Visual examination	IV

Provision	Method	Principle	Type
Pepper			
Filth in spices (Insect and Rodent)	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	-	-

## 10.2 Sampling Plans

Sampling plans are developed depending on the appropriate inspection level

Separate sampling plan for different levels of inspection (1 and 2) are given under table 7 and 8

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

Detailed below....

**Table 6 Sampling Plan 1 (Inspection Level I, AQL = 6.5)**



<b>NET WEIGHT IS EQUAL TO OR LESS THAN 1KG (2.2LB)</b>		
<b>Lot Size (N)</b>	<b>Sample Size (n)</b>	<b>Acceptance Number (c)</b>
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
<b>NET WEIGHT IS GREATER THAN 1 KG (2.2 LB) BUT NOT MORE THAN 4.5 KG (10 LB)</b>		
<b>Lot Size (N)</b>	<b>Sample Size (n)</b>	<b>Acceptance Number (c)</b>
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
<b>NET WEIGHT GREATER THAN 4.5 KG (10 LB)</b>		
<b>Lot Size (N)</b>	<b>Sample Size (n)</b>	<b>Acceptance Number (c)</b>
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 7 Sampling Plan 2 (Inspection Level II, AQL = 6.5)

<b>NET WEIGHT IS EQUAL TO OR LESS THAN 1 KG (2.2 LB)</b>		
<b>Lot Size (N)</b>	<b>Sample Size (n)</b>	<b>Acceptance Number (c)</b>
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
<b>NET WEIGHT IS GREATER THAN 1 KG (2.2 LB) BUT NOT MORE THAN 4.5 KG (10LB)</b>		
<b>Lot Size (N)</b>	<b>Sample Size (n)</b>	<b>Acceptance Number (c)</b>
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
<b>NET WEIGHT GREATER THAN 4.5 KG(10LB)</b>		
<b>Lot Size (N)</b>	<b>Sample Size (n)</b>	<b>Acceptance Number (c)</b>
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

**Annex 2****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 ~~striketrough 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.