



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

**Fourth Session**

*Thiruvananthapuram, Kerala, India, 21-25 January 2019*

**REPORT OF THE ELECTRONIC WORKING GROUP ON PROPOSED DRAFT STANDARD FOR DRIED  
AND DEHYDRATED GARLIC**

**(Step 3)**

(Prepared by an electronic working group chaired by India and Mali)

Codex members and Observers wishing to submit comments at Step 3 on this draft should do so as instructed in **CL 2018/56/OCS-CCSCH** available on the Codex webpage/Circular Letters 2018:  
<http://www.fao.org/fao-who-codexalimentarius/circular-letters/en/>.

**Introduction**

1. The Codex Committee on Spices and Culinary Herbs, at its 3<sup>rd</sup> session (CCSCH3, 2017) held at Chennai, India agreed to establish an eWG led by India and Mali working in English to elaborate the specific requirements for the dried garlic under the group standard for "Dried Roots, Rhizomes and Bulbs" for circulation for comments at Step 3 and consideration at its next session (REP 17/SCH, para 82 (b)).
2. CAC40 (July 2017) approved the project document for new work (REP 17/CAC, para 84).

**Process of the EWG**

3. A total of 14 member countries, 1 member organization and 4 observer organizations participated in the work of this EWG. The list of participants of the EWG is provided in the Appendix II.
4. The EWG worked online using the Codex Electronic Platform and posted the first draft of the proposed draft standard on dried and dehydrated garlic for comments on 18<sup>th</sup> Sep 2017. In response, comments were received from 6 member countries and 1 observer organization<sup>1</sup>.
5. The draft document was amended based on the comments received and the second draft thus prepared was posted in the e-forum on 1<sup>st</sup> Feb 2018.
6. Comments were received from 5 member countries<sup>2</sup> in response to the second draft. Based on these comments, the final proposed draft standard on dried and dehydrated garlic was prepared and is provided in the Appendix I.

**Summary of responses**

7. Most of the members of the group actively participated in the standard formulation for dried and dehydrated Garlic by providing their valuable comments on the drafts circulated in the online platform.
8. Members proposed different values for certain physical and chemical parameters on dried and dehydrated garlic. These values are given in square brackets in Annex I & Annex II of the proposed draft standard (Appendix I) and are submitted to the committee for further discussion. The proposed values are also given below for reference:

(a) Moisture	:	[5] [6.5] [7]
(b) Total Ash on Dry Basis	:	[5.5] [6]
(c) Volatile organic sulfur compounds	:	[0.3] [*]

<sup>1</sup> Argentina, Chile, Iran, Japan, Poland, USA and International Organization of Spice Trade Associations

<sup>2</sup> Argentina, Brazil, Japan, Mexico and USA

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(d) Extraneous Matter	:	[0.5] [1]
(e) Foreign Matter	:	[0] [0.5]
(f) Mould visible	:	[0] [1]
(g) Dead insects, insect fragments, rodent contamination	:	[0] [0.5]

9. One country was of the opinion that instead of estimating the volatile organic sulfur compounds, sulfur containing amino acids and enzymes may be estimated as a parameter under chemical properties.
10. The final proposed draft standard contains the Scope and main aspects for setting the minimum quality requirements of the dried and dehydrated garlic that are intended for food production and for direct human consumption.

**Recommendations from EWG members**

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.

**PROPOSED DRAFT STANDARD FOR DRIED AND DEHYDRATED GARLIC****(Step 3)****1 SCOPE**

This Standard applies to garlic in their dried or dehydrated form as spices or culinary herbs, defined in Section 2.1 below, offered for direct consumption, as an ingredient in food processing, or for repacking if required. This standard does not apply to the product when intended for industrial processing.

**2 DESCRIPTIONS****2.1 Product definition**

Dried/Dehydrated garlic is a finished product obtained on drying the cloves and /or pieces of garlic (*Allium sativum* L).

**2.2 Styles/forms**

Spices and culinary herbs may be:

- Whole,
- Cracked/broken, or
- Ground/powdered
- Other styles distinctly different for those three are allowed, provided they are labelled accordingly.

The particles size of pieces and ground/powdered styles is determined by contractual agreement between buyer and seller.

**3. ESSENTIAL COMPOSITION AND QUALITY FACTORS****3.1 Composition**

Product shall belong to the one defined in para 2.1 and shall conform to requirements set in Annexes I and II (Chemical and Physical Properties of Dried and Dehydrated Garlic). The General name may be used if the product is a blend of the different species listed under the General name of that commodity. When a specific name is used, the product must contain a minimum of 80% of the species listed for the specific name.

**3.2 Quality factors****3.2.1 Odour, flavor and color**

The product shall have a characteristic aroma, color (white and pale cream) and flavor which can vary depending on geo-climatic factors/conditions/varieties and shall be free from any foreign odour or flavour and especially from mustiness.

**3.2.2 Chemical and physical characteristics**

The generic product shall comply with the requirements specified in Annex I (Chemical Characteristics) and Annex II (Physical Characteristics). Dried bulbs shall be free from live insects and practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision). The defects allowed must not affect the general appearance of the product as regards to its quality, keeping quality and presentation in the package. There shall not be any form of adulteration in the product.

**3.2.3 Classification of "Defectives"**

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

**3.2.4 Lot Acceptance**

A lot should be considered as meeting the applicable quality requirements referred in 3.2 when the number of "defectives", as defined in Section 3.2 does not exceed the acceptance number of the appropriate sampling plan.

#### **4 FOOD ADDITIVES**

To facilitate the retention of powdered state of the product, anticaking agents that are listed in Table 3 of the Codex General Standard for Food Additives (CXS 192-1995) may be used.

#### **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* (CXS 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* (CXC 1-1969), the *Code Of Hygienic Practice For Low-Moisture Foods* (CXC 75-2015) 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 related to Foods* (CXG 21-1997).

**6.3** The packaging must not be a source of contamination, should be food grade and must protect the product quality during transportation and storage. It must be free from off odours.

#### **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* (CXS 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 as described in Section 2.1

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

**8.2.3** Species, variety or cultivar may be listed on the label.

##### **8.3 Country of origin/country of harvest**

**8.4** Commercial Identification

- Class/Grade, if applicable

- Size (optional)

**8.5** Inspection mark (optional)

##### **8.6 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. METHODS OF ANALYSIS AND SAMPLING

### 9.1 Methods of Analysis<sup>1</sup>

Parameter	Method	Principle
Moisture	ISO 939 AOAC 2001.12 & AOAC 986.21 ASTA 2.0	Distillation
Total Ash	ISO 928 AOAC 941.12 ASTA 3.0	Gravimetry
Acid Insoluble Ash	ISO 930 AOAC 941.12 ASTA 4.0	Gravimetry
Extraneous Matter	ISO 927 ASTA 14.1	Visual Examination
Foreign Matter	ISO 927 AOAC 960.51	Visual Examination
Insect Damage	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual, FDA Technical Bulletin Number 5) <a href="http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm084394.htm#v-32">http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm084394.htm#v-32</a>	Visual Examination
Insects/Excreta/Insect Fragments	Method appropriate for particular spice from AOAC Chapter 16, subchapter 14	Visual Examination
Cold Water Soluble Extract	ISO 941	Distillation
Volatile Organic Sulfur Compounds Content	ISO 5567	Distillation followed by Titrimetry

<sup>1</sup> Latest edition or version of the approved method should be used

### 9.2 SAMPLING PLAN

To be developed

## ANNEX I

A. Chemical Properties for Dried and Dehydrated Garlic	
Parameter	Requirement
Moisture, % w/w (max)	
(i) In case of Powdered Garlic	[5] [6.5] [7]
(ii) Other than Powdered Garlic	8
Total ash on dry basis, % w/w (max)	[5.5] [6]
Acid Insoluble Ash, on dry basis, % w/w (max)	0.5
Volatile organic sulfur compounds content, % (m/m) on dry basis, min.	0.3 [*]
Cold-water-soluble extract, % (m/m) on dry basis,	
Minimum	70
Maximum	90

\*Some countries are in the opinion that instead estimating the volatile organic sulfur compounds, sulfur containing amino acids and enzymes may be estimated

## ANNEX II

B. Physical Properties for Dried and Dehydrated Garlic	
Parameter	Requirements
Extraneous matter, % w/w (max) <sup>1</sup>	[0.5] [1]
Foreign matter	[0] [0.5]
Mould visible, maximum, % mass fraction <sup>2</sup>	[0] [1]
Live Insects	0
Dead insects, insect fragments, rodent contamination max % mass fraction	[0] [0.5]

**Note:**

1. Vegetative matter associated with the plant from which the product originates – but is not accepted as part of the final product.
2. Any visible objectionable foreign detectable matter or material not usually associated with the natural components of the spice plant; such as sticks, stones, burlap bagging, metal etc.

## APPENDIX II

**List of participants- EWG to develop group Standard for “Dried Roots Rhizomes and Bulbs”  
- Specific requirements for Dried Garlic**

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