CODEX ALIMENTARIUS COMMISSION

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World Health Organization

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON SPICES AND CULINARY HERBS
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Revised PROPOSAL FOR NEW WORK ON A CODEX STANDARD FOR SPICES IN THE FORM OF DRIED FRUITS AND BERRIES

(Submitted by the United States)

During the discussion on the Work Management Modalities at the First Session of CCSCH, the Committee agreed that a maximum of four (4) standards per session would be developed, however, over its four (4) sessions only three (3) standards were developed. If the Work Management Modalities of four (4) standards per session is applied, the standardization process would take a minimum of 23 sessions or 46 years to complete considering there are 109 named spices and culinary herbs. Even if the Committee succeeds in developing four standards at every session, which experience has shown is unlikely, this is a very lengthy and arduous process.

The third Session of the Codex Committee of Spices and Culinary Herbs agreed to recommend to Codex Alimentarius Commission (CAC), to approve the proposed strategy for developing horizontal group standards which would enable the Committee to increase its outputs as well as complete its work in a defined time. CCSCH further agreed to inform the CAC, that to facilitate its work, a general standard template had been developed and this would be used for the new standards. (REP17/SCH).

The Committee agreed to adopt the grouping strategy based on that parts of the plant the SCH is derived from i.e. floral, fruits and berries; seeds; leaves; bark; rhizomes, roots and bulbs. It also agreed that the grouping strategy would involve elaborating the general requirements for a particular group of spices falling under the same plant part category while the specific chemical and physical characteristic /requirements for each spice or herb within the said group would be put in an Annex.

The 73rd Session of the Executive Committee of the Codex Alimentarius Commission (CCEXEC73), recommended that CCSCH consider at its next session (CCSCH4) adopting a phased approach in developing group standards, for example, by prioritizing work on standards for individual commodities belonging to the same group prior to developing a group standard; and establishing a Physical Working Group (e.g. in-session WG) or other mechanisms to consider written comments and facilitate discussion of consolidated drafts.

CCSCH3 accepted the United States of America proposal to prepare a Discussion Paper on developing group standards derived from one of the six broad groups of Spices and Culinary Herbs (SCH). The Discussion Paper was prepared using the group of spices derived from dried fruits and berries (Annex II) and was presented and discussed at CCSCH4 (2019), as part of the proceedings of the In-Session Working Group on Priorities and Group Standards. The Committee noted with gratitude the agreement of the United States of America to continue updating the Group layout template, considering the discussions undertaken at the CCSCH4, and to include the grouped approach for discussion at the CCSCH5.

The group approach to standard development allows CCSCH to become more efficient and responsive to the needs of its public and private sector stakeholders by delivering standards in a timely manner. The resources of CCSCH plenary sessions and its working groups that are used to discuss redundant standardized/templated text for a single CSH standard, can now be spent on the most important parts of the standard i.e. the Annex having the chemical and physical characteristics of each product within the group. .

Considering the recommendation of CCEXEC73 previously noted, the work already undertaken in the Discussion paper, and the CCSCH has already finalized two standards within the dried fruits and berries group (. Black White and Green Pepper (BWG) (CXS 326);); along with one draft standard in the Step process (i.e. dried and dehydrated chili peppers and paprika);It is opportune to start the group standard development using this SCH group..

The following short description for the various functions and sections of the standard layout as in the Group standard format:

(i) The group standard will include a *General Requirement* section that includes text common to all CCSCH Standards. However, the standard would facilitate any specific requirements for an SCH that differ from those in the *General Requirements*.

(ii) An annex containing two tables, one chemical characteristics (taste/flavor) and another on physical characteristics i.e. tolerances for defects allowed (safety and quality). Each table having columns with headings of the different common characteristic that is applied to all the spices in the group. The characteristics for each product will be placed horizontally beneath the said column headings.

(iii) A table on Methods of Analysis will be included in the group standard. It includes the method of Analysis for each parameter in the chemical and physical characteristic listed in the two respective tables. Conclusion:

The Committee is now invited to consider draft project document on the proposal for new work on Codex Standard for Spices in the form of dried fruits and berries (Appendix I)

Appendix I

Revised PROJECT DOCUMENT

PROPOSAL FOR NEW WORK ON CODEX STANDARD

FOR SPICES IN THE FORM OF DRIED FRUITS AND BERRIES

(Submitted by the United States)

0. Purposes and the Scope of the Standard

The purpose of the new work is to develop a group standard for spices derived from the Dried Fruits and Berries. This new approach to standard development will demonstrate the rapid development of standard development that the CCSCH's can build on for broader application within the Committee mandate.

1. Relevance and timeliness:

Spices and culinary herbs are not used for caloric content, but as condiments or ingredients for imparting taste/flavor to food and beverages. They are globally used and are historically an important part of international trade. In many countries SCH are one of the few remaining crops largely produced by small farmers as their main source of income. Therefore, developing a group standard quickens the standard development process to meet the needs of traders and consumers, but also assist in providing markets to producers. To expedite development of this group standard, spices within the group without significant trade data, chemical and physical characteristics are excluded from this proposal. However, when such information becomes available, they can be added at the request of a member.

Due to competitive markets, producers and traders are no longer willing to wait four to six years for the development of a standard. Therefore, to be relevant to the SCH sector, the CCSCH must deliver its standards - scientifically correct and in the shortest possible time. The grouping proposed allow the CCSCH to develop standards for six spices within the dried fruit and berry group at once. This format focusing mainly on the chemical (authenticity - taste/flavor) and physical (safety and quality) characteristics This faster method of development CCSCH standards will not compromise SCH quality and safety because these two characteristics sections will be the principal focal sections of the standard.

2. To Be Covered

The main aspects to be covered in the Proposed Draft group Standard will include:

1. **Scope**

   This Standard applies to spices derived from dried fruits and berries offered for direct consumption, as an ingredient in food processing, or for repackaging if required. It excludes spices intended for industrial processing.

2. **Product Definition**:
   a) The specific names of standardized products will be indicated whereby all six (6) commonly named products are listed in a table with their general, scientific, and subgroup names.
   b) **Styles**: This section will be elaborated in a broad manner that will apply to all products within the group in the predominant styles in trade (whole, cut/broken and ground/powdered). This section can be amended to reflect the style characteristics of a specific product that is different from the three indicated.
3. **Classification:** Quality classes (Extra, Class I & Class II) are omitted because (i) they are not internationally accepted, (ii) the premise that Codex Standards should establish the "*absolute minimum requirements"* for international trade and consumer safety and (iii) the growing belief that classification should be left to contractual arrangements between traders

   Sections 3 to 9: These sections include mainly templated (standard format) texts that rarely changes. However, changes may be made if needed to better reflect the product characteristics, trade practices or to enhance food safety.

   Annex on Chemical and Physical Characteristics: This annex includes two tables, one for chemical characteristics and one for physical characteristics. Each table has the common product name listed in the same sequence as in Section 2.1 Product Definition along with the name of individual chemical and physical characteristics that must be checked as the heading of columns. In the same line with the named spice and the different styles, beneath each column heading, the minimum or maximum characteristic value will be entered. A last column titled "Other factors/comments" will be used to

facilitate inclusion of characteristics unique to an individual spice that do not fit within the common column headings.

4. An Assessment against the Criteria for the Establishment of Work Priorities

The development of the Group Standard format has been discussed in every CCSCH session. In the last three sessions, it discussed by "In-session Working Group on Priorities" that selects project proposals submitted for the development of standards. Most of the text in the CCSCH standards is consistent across all spices and herbs, (for example, sections including contaminants, food hygiene, weights and measures, food additives and labeling). The group standard will allow the CCSCH to focus on the variables among spices in ensuring consumer food safety and fair practices in the food trade.

Within the Dried Fruits and Berries group, the CCSCH completed two standards for Black, White and Green Peppers (CXS 326-2017). The committee is currently working on the development of a standard for Chili Pepper and Paprika at Step 3. A proposal for the development of a standard for cardamom was placed on the priority list for standardization at CCSCH4.

Volume of production and consumption in individual countries and volume and pattern of trade between countries

When compared to the volume of other agricultural products internationally traded, the volume of dried SCH are miniscule, however, SCH are have higher monetary value per kg or lb. or ton. Based on the availability of trade data, the following spices within the fruit and berries group are prioritized at this time (Table 1). Some other spices in this group including ambrette, cambodge, grains of paradise, kokam, dried mango and dried tamarind were not included in the table since they were not globally significantly traded. Production trade and value data for some spices in this group are not readily available due to the practice of placing the so called "minor spices" individual production and trade data under the general "spice" heading including by FAOSTAT and the Harmonized Tariff System (HTS).

	Common Name	**Top Producers and Trade pattern between countries**	**Trade Volume**
1	Allspice	$1.94B total (2018) <u>Top Exporters (2018)</u> India: $690M; China: $531M; Spain: $170M; Peru: $80.5; Mexico: $74.6M <u>Top Importers (2018)</u> United States: $298M; Vietnam: $208M; Thailand: $153M; China: $145M; Spain: $103M	591.5K Metric tons (2019)
2	Juniper berry	$16,996K total exported (2019) $54,000 total imported (2018) <u>Top Exporters (2019)</u> Switzerland: $1,870K; United States: $1,740K; Brazil: $1,634K; Austria: $1,548; United Kingdom: $1,350K <u>Top Importers (2018)</u> India: $23,000; United States: $21,000; Tunisia: $5,000; Egypt: $3,000; Netherlands: $1,000	
3	Star Anise	$281M total (2018) <u>Top Exporters (2018)</u>	

		China: $51.2M; Egypt: $38.1M; India: $36.8M. Vietnam: $29M; Afghanistan: $18.3M Top Importers India: $44.9M; Vietnam: $42.2M; Germany: $27.5M; United States: $24.3M; United Kingdom: $9.03M	
4	Vanilla	$1.02Billion total (2019) Top Exporters Madagascar: $584M; France: $99M; Germany: $69M; Indonesia: $69M; Canada: $65M Top Importers USA: $525M; France: $209M; Germany: $125M Canada: $65M; Japan: $27M; Netherlands: $24M	7575 tons (2018)

Table 1. Trade data for various fruits and berries type of spices. [The spices listed in this table does not comprise all spices in the dried fruit and berries grouping.]

a) Diversification of national legislations and apparent resultant or potential impediments to International trade:

Globally, there exist diverse regulatory requirements and industry trade practices from existing national and international standards and regulations, including the following:

- Agmark India
- European Spice Association (ESA) - Quality Minima Document Rev.5
- International Organization for Standardization (ISO)
- America Spice Trade Association (ASTA) Cleanliness Specifications
- United States Food and Drug Administration (FDA) Defect Action Levels
- Bureau of Standards Jamaica
- United States Department of Agriculture (USDA)
- Bureau of Indian Standards

Indian Food Safety Standards 2.9.36 Pimento or Allspice

Indian Food Safety and Standards Regulation 2011 - Cardamom

b) International or regional market potential:

Table 1 lists certain spices that are significantly traded internationally in terms of market potential, trade values and patterns. These are therefore justified to be included for the development of standards under the 'fruits and berries' grouping scheme. These include all spice, juniper berries, mustard, star anise and vanilla.

c) Amenability of commodity(ies) to standardization

There is existing information for physical and chemical characteristics for these spices, and discussions with the major exporting and importing countries of these commodities will help in harmonizing the values for some of the parameters as well as provide data for some missing

parameters. Some of the listed spices have national food safety standards and some have current ISO standards.

d) Coverage of the main consumer protection and trade issues by existing or proposed general standards

The new work proposal includes significantly traded spices and, consumer protection is expected. The priority commodities for inclusion in the group as indicated in Table 1.

e) Work already undertaken by other international organizations in this field and/or suggested by the relevant international intergovernmental body (dies)

Some of the work already undertaken includes:

ISO 11178:1995 Star anise (Illicium verum Hook. f.) — Specification

f) Relevance to the Codex strategic objectives

This grouping approach aligns with the Codex 2020-2025 strategic goals. As aforementioned, developing group standards will address critical issues in a timely manner. The development of these standards will be based on science and risk-analysis principles. Categorizing the spices based on the plant part used, will not only make the standard functional, efficient and user-friendly but organizing these various spices in a single location will increase the impact and will make the Codex standards more recognizable across the globe.

5. Information on the relation between the proposal and other existing Codex documents as well as other Ongoing Work

This standard would be based on both the already adopted Codex Standards i.e. Black/white/green pepper (BWG) (CXS 326); as well as the ongoing work on dried chili and paprika. The new proposal cardamom will also be considered.

6. Identification of Requirement for Availability of Expert Scientific Advice

The expertise required during the development of this standard will be referred to the relevant committees including the Codex Committee on Food Labeling (CCFL), Codex Committee on Methods on Analysis and Sampling (CCMAS), Codex Committee on Food Additives (CCFA), and the joint FAO/WHO programs (JECFA, JEMRA, etc.).

7. Identification of Need for Technical Input to the Standard from External Bodies

No need for technical input from external bodies is anticipated at this point in time.

Proposed Timeline for Completion of New Work

DATE	ACTIVITY	OUTCOME
2021	5th CCSCH Session	Project Submitted
2022	6th CCSCH Session	Step 3
2024	7th CCSCH Session	Adopted Step 5/8

Appendix II

DRAFT CODEX GENERAL STANDARD

FOR SPICES IN THE FORM OF DRIED FRUITS AND BERRIES

1. SCOPE

This Standard applies to all those plants commonly sold in commerce as defined in Section 2.1 below, and offered for direct human consumption, commercial food processing, and for repacking if required. The exact species bought/sold may be defined by contractual specifications. This standard does not apply to these products when intended for industrial processing.

2. DESCRIPTION

2.1 PRODUCT DEFINITION

2.1.1 Dried fruits and berries belonging to the varieties listed in Table 1:

Table 1: of Dried Fruit and Berries covered by this standard

	Common Name	**Trade Name/s**	**Scientific name**
1	Allspice	Allspice	*Pimenta dioica* (L) Merr.
2	Juniper berry	Juniper berry	*Juniperus communis* L.
3	Star Anise	Star Anise	*Illicium verum* Hook. f.
4	Vanilla	Pompon vanilla	*Vanilla pompona* Schiede
		Vanilla/ Mexican Vanilla	*Vanilla planifolia* Andrews
		Tahitian Vanilla	*Vanilla tahitensis* J.W. Moore

A more comprehensive list of spices in the form of dried fruits and berries are listed in Annex 2

2.1.1.2 Vanilla may undergo curing and fermentation.

2.2. Styles

Dried fruits and berries may be:

- Whole
- Pieces
- Ground/powdered; size of particles to be determined by contractual agreement between buyer and seller.
- Other styles distinctly different for those three are allowed, provided they are labeled accordingly

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 COMPOSITION

3.1.1 Basic Ingredients

Dried fruits and berries as described in Section 2. Product Description

3.2 QUALITY CRITERIA

3.2.1 Odour, flavour and colour

Dried fruits and berries shall be free from any foreign odour or flavor, especially from mustiness. They should have the characteristic odour and flavour of the spice considering the geo-climatic factors/conditions/varieties and the chemical strain of the main components of the volatile oil indicated in the Annex.

3.2.2. Classification (optional)

Dried fruits and berries may be classified/graded as follows:

- Extra

- Class/ Grade I
- Class/Grade II

When dried fruits and berries are traded as both classified/graded and unclassified/ungraded, the minimum chemical and physical requirements for class/grade II in Annex I apply as the minimum requirements for unclassified/ungraded.

3.2.3 Chemical and physical characteristics

Dried fruits and berries shall comply with the Chemical and Physical properties in Annex I, Table 1-Chemical Characteristics and Table 2-Physical Characteristics. The defects allowed must not affect the general appearance of the product as regards to its quality, keeping quality and presentation in the package.

4 FOOD ADDITIVES

Anticaking agents listed in Table 3 of the General Standard for Food Additives (CXS 192-1995) are acceptable for use in powdered form of the foods conforming to this 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* (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* (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 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 and PACKAGING

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 Country of Origin.

Country of harvest/region of production (optional)

8.2.4 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 METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of Analysis

Provision	Method	Principle

Moisture	AOAC 2001.12 ASTA 2.0	Distillation
Total Ash	AOAC 950.49 ASTA 3.0	Gravimetry
Acid Insoluble Ash	ISO 930:1997 Alternative: ASTA 4.0	Gravimetry
Volatile Oil	AOAC 962.17 ASTA 5.0	Distillation
Extraneous Matter	ISO 927:2009 Alternative: ASTA 14.1	Visual Examination
Foreign Matter	ISO 927:2009	Visual Examination
Insect Damage	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Microanalytical Procedure Manual, FDA Technical Bulletin Number 5)	Visual Examination
Insects/Excreta/Insect Fragments	Method appropriate for a particular spice from AOAC Chapter 16, subchapter 14	Visual Examination

Annex I:

Table 1

Chemical Characteristics for Dried Fruits and Berries

Name	Form/Style	Moisture content %w/w (max)	Total Ash % w/w (max)	Acid insoluble Ash % w/w max	Volatile Oils ml/100g (Min)	Markers Volatile Oil	Non-Volatile Ether Extract %W/W	Crude Fiber % By Mass	Comments/ Other Factors
Allspice	Whole	12	5	0.4	3				
	Pieces								
	Ground/Powdered	12	4.5	0.4	1		8.5	27.5	
Juniper Berries	Whole	16	4.0	1.0	[0.5] [0.6] [0.8] [1.2] 1.4 [1.5]				
	Pieces								
	Ground								
Star Anise	Whole	10	4	0.5	7				
	Pieces								
	Ground								
Vanilla	Whole	38							1.6 -2.4% vanillin
	Pieces	30							1.6 -2.4% vanillin
	Powder	25							1.6 -2.4% vanillin

TABLE 2:

Table on Physical Characteristics for Dried Fruits and Berries

Name	Form/ Style	Dead Whole Insects Count/100 Gm Max	Excreta Mammalian Mg/Kg Max	Mold Damage %W/W (Max)	Insect Defiled/Infested %W/W (Max)	Extraneous Matter %W/W (Max)	Foreign Matter %W/W (Max)	Live Insect	Shriveled Immature Broken	Excreta Other Mg/Kg Max	Bulk Density	Insect Fragments or Other Comments
Allspice	Whole	2	11	2	1	0.50		Free		5.0		Black berries white berries Broken berries with Stem- each @ 0.05% max
	Pieces											
	Ground/Powdered							Free				Insect fragments: 30/10g Rodent hair: 1/10g
Juniper Berries	Whole					2						
	Pieces											
	Ground											
Star Anise	Whole					2		0	25% max		130/100 gm	Stalks 3%
	Pieces											
	Ground											
Vanilla	Whole											
	Pieces (Cut and Bulk)											

Name	Form/ Style	Dead Whole Insects Count/100 Gm Max	Excreta Mammalian Mg/Kg Max	Mold Damage %W/W (Max)	Insect Defiled/Infested %W/W (Max)	Extraneous Matter %W/W (Max)	Foreign Matter %W/W (Max)	Live Insect	Shriveled Immature Broken	Excreta Other Mg/Kg Max	Bulk Density	Insect Fragments or Other Comments
	Powder											

Notes:

1: Bulk Density- In cases where no bulk density, the value, method, and methodology may be agreed by the traders,

2: Mammalian Excreta- If the average of the total number of sub-samples exceeds the listed milligram per kg and/or lb.

3: Whole Dead Insects- If the total number of whole dead insects found in the total number of the sub samples exceeds the specified value shown in the table

ANNEX II

List of Spices within the Dried Fruit and Berries Group

Sl. No	Name of Spice / culinary herb	Scientific Name	Sub-group
1	Bengal cardamom	*Amomum aromaticum Roxb.*	Cardamom
2	Cambodian cardamom	*Amomum krervanh Pierre ex Gagnep.*	Cardamom
3	Cameroon cardamom	*Aframomum hanburyi K.Schum.*	Cardamom
4	Cardamom (Large)/ Black cardamom	*Amomum subulatum Roxb.*	Cardamom
5	Cardamom (Small)	*Elettaria cardamomum Maton*	Cardamom
6	Korarima cardamom	*Aframomum koranima*	Cardamom
7	Madagascar cardamom	*Aframomum angustifolium K.Schum.*	Cardamom
8	Round cardamom/Chester cardamom/Siamese cardamom/ Indonesian cardamom	*Amomum kepulaga Sprague & Burkill*	Cardamom
9	Sri Lankan Cardamom	*Elettaria cardamomum var.major (Sm.) Thwaites*	Cardamom
10	Tsao-ko Cardamom	*Amomum tsao-ko Crevost & Lemarié*	Cardamom
11	Chilli	*Capsicum annuum L.*	Chilli
12	Paprika	*Capsicum frutescens L.*	Chilli
13	Brazilian pepper	*Schinus terebenthifolius Raddi*	Pepper
14	Chinese pepper	*Zanthoxylum acanthopodium DC.*	Pepper
15	Chinese prickly ash pepper/ Sechuang pepper	*Zanthoxylum bungei*	Pepper
16	Cubebs	*Piper cubebe*	Pepper
17	Grain of paradise (Guinea grains, Melegueta pepper, Alligator pepper)	*Aframomum melegueta (Roscoe) K. Schum.*	Pepper
18	Negro pepper / Guinean pepper pods	*Xylopia aethiopica A.Rich.*	Pepper
19	Pepper (Black, White, Green)*	*Piper nigrum L.*	Pepper
20	Pepper Long	*Piper longum L.*	Pepper
21	Pink pepper	*Schinus molle*	Pepper
22	Sichuan pepper /Japanese pepper	*Zanthoxylum piperitum (L.) DC.*	Pepper

Sl. No	Name of Spice / culinary herb	Scientific Name	Sub-group
23	West African / Benin pepper	*Piper guineense Schumach. & Thonn.*	Pepper
24	Allspice	*Pimenta dioica (L) Merr.*	
25	Camboge	*Garcinia cambogia Desr.*	
26	Dried Mango	*Mangifera indica*	
27	Juniper berry	*Juniperus communis L.*	
28	Kokam	*Garcinia indica (Thouars) Choisy*	
29	Pompon vanilla	*Vanilla pompona Schiede*	
30	Star Anise	*Illicium verum Hook. f.*	
31	Tahitian Vanilla	*Vanilla tahitensis J.W.Moore*	Vanilla
32	Tamarind fruit	*Tamarindus indica L.*	Vanilla
33	Vanilla	*Vanilla planifolia Andrews*	Vanilla

*Already Standardized. CXS 326-2017.