

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR DRIED SEEDS – NUTMEG

CXS 352-2022

Adopted in 2022

1. SCOPE

This standard applies to dried seeds, in their dried or dehydrated form as spices, as defined in Section 2.1 below, offered for direct consumption, as an ingredient in food processing, or for repackaging if required. It excludes dried seeds and powder for industrial processing.

2. DESCRIPTION

2.1 Product definitions

2.1.1 Dried nutmeg is the “seed” of *Myristica fragrans* Houtt. of the Myristicaceae family (Table 1), having reached appropriate degree of development,ⁱ harvested and treated properly post-harvest, by undergoing operations such as stripping, drying, sorting, cracking, grading, and/or grinding before final packaging, and sold in styles as described in Section 2.2.

Table 1: Dried seeds covered by this standard

Common name	Scientific name
Nutmeg	<i>Myristica fragrans</i> Houtt.

2.1.2 Nutmeg has a variety of shapes from ovoid to broadly ovoid, with a variety of sizes. Nutmeg kernels have a slightly wrinkled-like surface. Inshell nutmeg seeds may rattle due to the seed’s shrinkage within the shell in the drying process.

2.2 Styles

Dried nutmeg may be offered in one of the following styles:

2.2.1 Whole inshell.

2.2.2 Whole shelled.

2.2.3 Broken seed (obtained from the seed only).

2.2.4 Ground/powdered seed (obtained from the seed only).

2.3 Sizing (optional)

Whole nutmegs (inshell and shelled) may be sized by count per weight, weight, diameter, or in accordance with pre-existing trade practice. When sized, the methods used should be labelled on the package.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Compositions

Product as described in Section 2.

3.2 Quality factors

3.2.1 Odour, flavour and colour

The products shall have a characteristic odour, flavour, and colour, which may vary depending on geo-climatic factors/conditions, and shall be free from any foreign odour, flavour, and colour especially from rancidity and mustiness.

3.2.2 Chemical and physical characteristics

Dried nutmeg shall comply with the requirements specified in Annex I (Table 1: Chemical characteristics for whole, broken and ground/powdered nutmeg, and Table 2: Physical characteristics for whole, broken and ground/powdered nutmeg). The defects allowed must not affect the general requirements of the product as regards to its quality, keeping quality and presentation in the package.

3.2.3 Classification (optional)

When dried nutmeg is traded as classified, the chemical and physical characteristics in Annex I apply as the minimum requirements.

ⁱ Having the mature pericarp opened naturally (not opened manually or mechanically) and the red aril known as mace is clearly visible and formed.

4. FOOD ADDITIVES

Anticaking agents listed in Table 3 of the *General Standard for Food Additives* (CXS 192-1995)¹ are acceptable for use in the 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),² the *Code of Practice for the Prevention and Reduction of Mycotoxins in Spices* (CXC 78-2017)³ and other relevant Codex texts.

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

6. 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),⁴ the *Code of Hygienic Practice for Low-Moisture Foods* (CXC 75-2015),⁵ Annex III on Spices and Dried Culinary Herbs, and other relevant Codex texts.

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

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 this standard shall be labelled in accordance with the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985).⁷ In particular, 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 shall include an indication of the style as described in Section 2.2.

8.3 Country of origin and country of harvest

8.3.1 Country of origin shall be declared.

8.3.2 Country of harvest (optional).

8.3.3 Region of harvest and year of harvest (optional).

8.4 Commercial identification

8.4.1 Size (optional) only for whole inshell and shelled styles.

8.5 Labelling of non-retail containers

The labelling of non-retail containers should be in accordance with the *General Standard for the Labelling of Non-Retail Containers of Foods* (CXS 346-2021).⁸

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of analysis

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999)⁹ relevant to the provisions in this standard, shall be used.

9.2 Sampling plan

To be developed.

ANNEX I

Table 1: Chemical characteristics for whole, broken and ground/powdered nutmeg

Description	Specification (without shell)		
	Whole	Broken	Ground/Powdered
Moisture content, % w/w (max)	10.0	10.0	8.0
Total ash on dry basis, % w/w, (max)	3.0	3.0	3.0
Acid insoluble ash, on dry basis, % w/w, (max)	0.5	0.5	0.5
Water-insoluble ash on dry basis, % w/w, (max)	1.5	1.5	1.5
Volatile oil content on dry basis, (ml/100 g) (min)	6.5	6.0	5.0

Table 2: Physical characteristics for whole, broken and ground/powdered nutmeg

Parameters	INSHELL (with shell)	SHELLED SEED (without shell)		
	Whole	Whole	Broken	Ground/Powdered
Extraneous matter, ^a % w/w (max)	0.5	0.5	0.5	N/A
Foreign matter, ^b % w/w (max)	0.5	0.5	0.5	N/A
Mould visible, ^c % w/w (max)	5	5	N/A	N/A
Insect defiled/infested % w/w (max)	5	5	N/A	N/A
Dead whole insects, count/100 g (max)	4	4	4	N/A
Insect fragments, count/10 g (max)	N/A	N/A	100	N/A
Rodent contamination (hair), count/10 g (max)	N/A	N/A	N/A	1
Live insect, by count/100 g (max)	0	0	0	0
Mammalian and or other excreta, mg/kg (max)	0	0	11	N/A
Piece of mace, % w/w (max)	0.1	N/A	N/A	N/A
Off size, when sized, % w/w (max)	10	10	N/A	N/A
Broken/damaged (for whole only) % w/w (max)	2	3	N/A	N/A

^a Vegetative matter associated with the plant from which the product originates – but is not accepted as part of the final product.

^b 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.

^c Seen by naked eyes (corrected, if necessary, for abnormal vision).

N/A: Not applicable, means that this form of the above product has not been evaluated for this provision, and currently we do not have values. N/A does not refer to zero.

NOTES

¹ FAO and WHO. 1995. *General Standard for Food Additives*. Codex Standard, No. CXS 192-1995. Codex Alimentarius Commission. Rome.

² FAO and WHO. 1995. *General Standard for Contaminants and Toxins in Food and Feed*. Codex Standard, No. CXS 193-1995. Codex Alimentarius Commission. Rome.

³ FAO and WHO. 2017. *Code of Practice for the Prevention and Reduction of Mycotoxins in Spices*. Codex Code of Practice, No. CXC 78-2017. Codex Alimentarius Commission. Rome.

⁴ FAO and WHO. 1969. *General Principles of Food Hygiene*. Codex Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

⁵ FAO and WHO. 2015. *Code of Hygienic Practice for Low-Moisture Foods*. Codex Code of Practice, No. CXC 75-2015. Codex Alimentarius Commission. Rome.

⁶ FAO and WHO. 1997. *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods*. Codex Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.

⁷ FAO and WHO. 1985. *General Standard for the Labelling of Pre-packaged Foods*. Codex Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

⁸ FAO and WHO. 2021. *General Standard for the Labelling of Non-Retail Containers of Foods*. Codex Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome.

⁹ FAO and WHO. 1999. *Recommended Methods of Analysis and Sampling*. Codex Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.