



**THAI AGRICULTURAL STANDARD**

**TAS 1511-2009**

# **DRIED JELLY MUSHROOM**

**National Bureau of Agricultural Commodity and Food Standards**

**Ministry of Agriculture and Cooperatives**

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# **DRIED JELLY MUSHROOM**

**National Bureau of Agricultural Commodity and Food Standards**

**Ministry of Agriculture and Cooperatives**

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**Technical Committee on the Elaboration of Thai Agricultural Standard for  
Dried Jelly Mushroom**

- |     |                                                                                                                                         |                      |
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| 15. | Mrs. Chutiwan Jatupornpong<br>Office of Commodity and System Standards,<br>National Bureau of Agricultural Commodity and Food Standards | Member and Secretary |

Dried jelly mushroom is an agricultural commodity which Thailand has high potential in production. The establishment of the standard for dried jelly mushroom will help develop the production in terms of quality and safety of the product. Moreover, it will help create the recognition of the product in the domestic and international markets. The Agricultural Standards Committee deems it necessary to establish an agricultural standard on dried jelly mushroom to protect consumers and promote Thai export.

The standard is based on the information of the following documents:

National Bureau of Agricultural Commodity and Food Standards. 2005. A collaborative project with Kasetsart University on the Important Characteristic Index to Be Used as Criteria for Quality, Classification, and Size Designation of Mushrooms.

CODEX STAN 39-1981. Codex Standard for Dried Edible Fungi. Joint FAO/WHO. Food Standards Programme, FAO, Rome.



**NOTIFICATION OF THE MINISTRY OF AGRICULTURE AND COOPERATIVES  
SUBJECT: THAI AGRICULTURAL STANDARD:  
DRIED JELLY MUSHROOM  
UNDER THE AGRICULTURAL STANDARDS ACT B.E. 2551 (2008)**

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Whereas the Agricultural Standards Committee deems it necessary to establish an agricultural standard entitled Dried Jelly Mushroom as a voluntary standard in accordance with the Agricultural Standards Act B.E. 2551 (2008) to promote such agricultural commodity to meet its quality standard and safety.

By virtue of Section 5, Section 15 and Section 16 of the Agricultural Standards Act B.E. 2551(2008), the Minister of Agriculture and Cooperatives hereby issues this Notification on Establishment of Agricultural Standard: Dried Jelly Mushroom (TAS 1511-2009) as voluntary standard, details of which are attached herewith.

Notified on 29 September B.E. 2552 (2009)

(Mr. Theera Wongsamut)  
Minister of Agriculture and Cooperatives

## THAI AGRICULTURAL STANDARD

### DRIED JELLY MUSHROOM

#### 1 SCOPE

This standard applies to dried jelly mushroom (or dried black jelly fungus or dried wood ear mushroom) which is obtained from fresh edible mushroom *Auriculari app.* of the *Auriculariaceae* family and can be reconstituted for cooking.

#### 2 DEFINITIONS

For the purpose of this standard, the following definitions apply:

2.1 *Dried jelly mushroom* means the product obtained from fresh mushroom of good quality which have been trimmed to the desired styles and dried. The product shall be put in a package which can prevent contamination and moisture. The product shall be reconstituted when soaked in water.

2.2 *Water activity* ( $A_w$ ) means a measure of free water in a product which has an effect on the growth of microorganism and the change of food. Water activity is the vapor pressure of water in food divided by the vapor pressure of pure water at the same temperature.

#### 3 STYLES

Five styles of dried jelly mushroom are as follows:

3.1 *Cluster* means dried jelly mushroom of more than one cap

3.2 *Single* means dried jelly mushroom in single and the largest width is not less than 2 cm

3.3 *Strip* means dried jelly mushroom which is in strip

3.4 *Square* means dried jelly mushroom which has an approximately square shape

3.5 *Other Style* means dried jelly mushroom which has a different form of presentation distinctive from those in Sections 3.1 - 3.4 but meet all relevant requirements of this standard and its style is specified on the label.

#### 4 QUALITY

##### 4.1 General Requirements

4.1.1 Dry and clean

4.1.2 Colour, odour and texture shall be appropriate to the species and free from musty smell

4.1.3 When soak in water, the dried jelly mushroom shall be reconstituted approximately to the original shape of the fresh mushroom

4.1.4 Water activity of less than 0.6

## 4.2 Defects

Defects of dried jelly mushroom shall not exceed the criteria given in Table 1.

**Table 1 Criteria for acceptance**  
(Section 4.2)

Defect	Allowable Defect	
	Cluster and single	Strip, square and other style
Foreign matters such as insect or its parts, animal hair and human hair	Not detected	Not detected
Damaged mushroom (mushroom of the largest width of 0.5 cm – less than 2 cm)	Not more than 1% by weight	Not specified
Crushed mushroom (part of the mushroom passing through sieve mesh of 0.5 cm) and parts of culture materials	Not more than 1% by weight	Not specified

## 5 FOOD ADDITIVES

If used, this provision shall be complied with the relevant laws and the provisions in the Thai Agricultural Standard for Food Additives.

## 6 CONTAMINANTS

This provision shall be complied with the relevant laws and the provisions in the Thai Agricultural Standard for Contaminants.

## 7 PESTICIDE RESIDUES

This provision shall be complied with the relevant laws and the provisions in TAS 9002 Standard for Pesticide Residues: Maximum Residue Limits and TAS 9003 Standard for Pesticide Residues: Extraneous Maximum Residue Limits

## 8 HYGIENE

8.1 Production and treatment of dried jelly mushroom shall comply with TAS 9023 Code of Practice: General Principles of Food Hygiene

8.2 Dried jelly mushroom shall not have microorganism more than those given in Table 2.

**Table 2 Microorganism**  
(Section 8.2)

<b>Type</b>	<b>n</b>	<b>c</b>	<b>m</b>	<b>M</b>
Mould	5	0	1x10 <sup>3</sup> cfu/g	-
<i>Salmonella</i> spp.	5	0	not detected in 25g	-
<i>Staphylococcus aureus</i>	5	2	1x10 <sup>2</sup> cfu/g	1x10 <sup>3</sup> cfu/g

**Note**

n means the number of the sample for inspection from each lot

c means the largest number of sample allowable to have microorganism higher than m

m means the number of microorganism allowable in the sample

M means the number of microorganism found in the sample and is the reason for rejection of the lot

cfu/g means colony forming unit per gram

In case where M is not specified, m and c shall be used as the criteria.

In case where M is specified and if the microorganism found in the sample is larger than m, the number of sample which the microorganism is larger than m shall not be larger than c and the number of microorganism found shall not be more than M.

For the manufacturer who has Quality Assurance System (e.g. Good Manufacturing Practice (GMP), Hazard Analysis and Critical Control Point (HACCP)) and good history of production system, the number of sampling for inspection of microorganism may be reduced.

## **9 PACKAGING**

### **9.1 Uniformity**

Dried jelly mushroom in each package shall be uniform in quality, size and colour.

### **9.2 Package**

The package shall be clean and free from foreign matters and smell which can affect the quality of the content. The package shall be durable during transportation, able to protect against contamination harmful to human health, and to preserve quality of the content.

## **10 LABELLING**

Labelling shall be complied with the relevant laws and shall be legible and permanent without false or deceptive information on the accompanying document, label or package, at least, as follows:



**10.1 Retail container for direct consumer**

The following information shall be labelled on the package.

10.1.1 Name of the product “Dried jelly mushroom” and its style

10.1.2 Net weight in metric system

10.1.3 If food additive is used, functional class and specific name or International Numbering System of the food additives in accordance with the requirements of Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme under CAC/GL 36-1989 Codex Class Names and the International Numbering System for Food Additives.

10.1.4 Name and address of producer or re-packer in case of the local product or name and address of importer in case of imported product

10.1.5 Country of origin

10.1.6 Lot number or lot code

10.1.7 Manufacturing date, expiry date, or best before date

10.1.8 Instruction for use or storage

10.1.9 For the product intended for domestic market, all information shall be in Thai. For the product to be exported, the information can be in foreign language

**10.2 Non-retail or bulk container**

The following information shall be labelled on the accompanying document, label or package

10.2.1 Name of the product “ Dried jelly mushroom” and its style

10.2.2 Net weight in metric system

10.2.3 If food additive is used, functional class and specific name or International Numbering System of the food additives in accordance with the requirements of Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme under CAC/GL 36-1989 Codex Class Names and the International Numbering System for Food Additives.

10.2.4 Name and address of producer or re-packer in case of the local product, name and address of importer in case of imported product

10.2.5 Country of origin

10.2.6 Lot number or lot code

10.2.7 Manufacturing date, expiry date, or best before date

10.2.8 Instruction for use or storage

10.2.9 For the product for local use, the information shall be in Thai. For the product to be exported, the information can be in foreign language.

**11 OFFICIAL INSPECTION MARK OR CERTIFICATION MARK**

This provision shall be complied with the requirements and conditions notified by the Agricultural Standards Committee or by the requirements and conditions of the recognised inspection or certification body.

## 12 METHODS OF ANALYSIS AND SAMPLING

### 12.1 Methods of Analysis

The methods are given in Table 3 (referring to the latest edition).

**Table 3**  
**Methods of analysis and testing of dried jelly mushroom**  
(Section 12.1)

Requirement	Methods of analysis	Principles
1. General requirement (Sections 4.1.1 and 4.1.2)	Visual inspection	-
2. Reconstitution (Section 4.1.3)	Submerge dried jelly mushroom in water at room temperature for the duration as specified on the label. Inspect the reconstitution of the sample in comparison with the fresh jelly mushroom	-
3. Water activity (Section 4.1.4)	Water activity meter	-
4. Foreign matters (Section 4.2)	Visual inspection	-
5. Damaged mushroom (Section 4.2)	Visual inspection. Separate the damaged mushroom, weigh and calculate as percentage by weight	Gravimetry
6. Crushed mushroom and part of culture material (Section 4.2)	Sieve the sample through the 0.5 cm mesh. Weigh the crushed mushroom and part of culture material and calculate as percentage by weight	Gravimetry
7. Mould (Section 8.2)	Bacteriological Analytical Manual (BAM) Chapter 18 or the equivalent method	Enumeration method
8. <i>Salmonella</i> spp. (Section 8.2)	Bacteriological Analytical Manual (BAM) Chapter 5 or the equivalent method	Detection method
9. <i>Staphylococcus aureus</i> (Section 8.2)	Bacteriological Analytical Manual (BAM) Chapter 12 or the equivalent method	Enumeration method
10. Net weight (Sections 10.1.2 and 10.2.2)	Weighing	Gravimetry

### 12.2 Sampling

Sampling shall be as prescribed in Appendix B.

## Appendix A

### Photos of dried jelly mushroom

(Section 3)



Figure A.1 Cluster

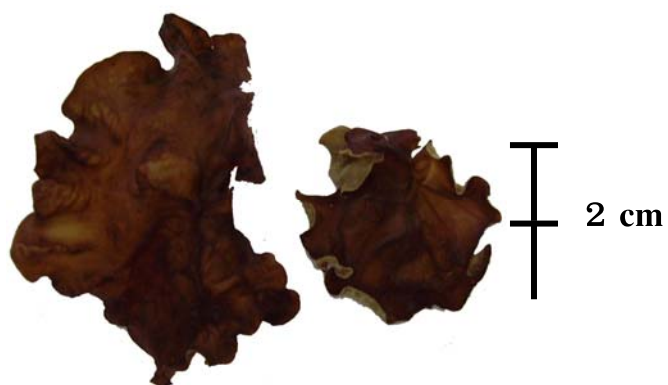


Figure A.2 Single

## Appendix B

### Sampling Method

(Section 12.2)

#### B.1 Definitions

The terms used are as follows:

B.1.1 *Lot* means the products of the same origin, produced by the same process and packed in the same type of container to obtain product of uniform quality and characteristics

B.1.2 *Sampling procedure* means the procedure used in drawing samples and the number of sampling units to be drawn for lot acceptance. Two levels of sampling are as follows:

(1) Primary sampling means the procedure used in drawing samples directly from the lots to be a good representative in sufficient amount for analysis and acceptance of the lots

(2) Secondary sampling means combining and mixing of all primary samples and reducing the sample to the appropriate quantity for analysis and acceptance of the lots

#### B.2 Primary sampling

B.2.1 Samples shall be drawn from the same lot with the sample size in accordance with Table B.1 or B.2 for inspection of package, marking and labelling and net weight.

B.2.2 When the samples meet the requirements in Sections 9 and 10, the lot is deemed to be complied with the standard.

**Table B.1**

**Primary sampling plan for the container size of at least 10 kg**

(Section B.2.1)

<b>Lot size (Number of container)</b>	<b>Sample size (Number of container)</b>
$\leq 100$	8
101 - 500	13
501 - 2,500	18
$> 2,500$	$\geq 23$

**Table B.2****Primary sampling plan for the container size of less than 10 kg**

(Section B.2.1)

<b>Lot size (Number of container units)</b>	<b>Sample size (Number of container units)</b>
≤ 500	13
501 - 3,200	18
3,201 - 35,000	23
> 35,000	≥ 30

**B.3 Secondary sampling**

Samples shall be taken from the primary samples (Section B.2.1) for laboratory analysis with the first priority of microorganism analysis. For the analysis of food additives, heavy metals and pesticide residues, sampling shall be conducted in accordance with the sampling plans prescribed in the related laws and the relevant Thai Agricultural Standards as follows:

B.3.1 Mix the sample taken according to the primary sampling plan in Section B.2.1 and randomly take sample for the following analysis:

B.3.1.1 Microorganisms (Section 8.2)

B.3.1.1.1 Take 5 container units from the samples in Section B.3.1, each of which shall be weighed not less than 300 g for microorganism analysis.

B.3.1.1.2 When the sample meets the requirement in Section 8.2, the lot shall be deemed as complied with the standard.

B.3.1.2 General requirements (Sections 4.1.1 - 4.1.3) and defects (Section 4.2)

B.3.1.2.1 Take sample of 300 g from the sample in Section B.3.1 and packed in a tightly sealed container for analysis of general requirements and defects.

B.3.1.2.2 When the sample meets the requirements in Sections 4.1.1, 4.1.2, 4.1.3 and 4.2, the lot shall be deemed as complied with the standard.

B.3.1.3 Water activity (Section 4.1.4)

B.3.1.3.1 Take sample of 500 g from the sample in Section B.3.1 and packed in a tightly sealed container for analysis of water activity.

B.3.1.3.2 When the sample meets the requirement in Section 4.1.4, the lot shall be deemed as complied with the standard.

## Appendix C

### Units

The units and symbols used in this standard and the units accepted by International System of Units (*Le Système International d'Unités*) are as follows:

<b>Items</b>	<b>Unit</b>	<b>Symbol</b>
Mass	gram	g
	kilogram	kg
Length	centimeter	cm