



**THAI AGRICULTURAL STANDARD**

**TAS 8-2006**

# **DRIED LONGAN FLESH**

**National Bureau of Agricultural Commodity and Food Standards  
Ministry of Agriculture and Cooperatives**

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

**Ministry of Agriculture and Cooperatives**

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Dried longan flesh, commonly known commercially as *golden dried longan flesh*, is processed agricultural product by which value is added to longan fruit, which is an important economic crop of Thailand. To promote the quality and safety of Thai dried longan flesh in the local as well as international market, for the purpose of consumer protection and for export promotion, the Ministry of Agriculture and Cooperatives considers that it is appropriate to develop a standard for dried longan flesh.

This standard is developed based on the data obtained from the study conducted by the National Bureau of Agricultural Commodity and Food Standards in cooperation with Faculty of Agro-Industry of Chiang Mai University on the indicative index which is used as quality criteria, classification and size designation of dried whole longan fruit.

**Remark:**

The standard title has been revised from “Thai Agricultural Commodity and Food Standard (TACFS X-XXXX)” to “Thai Agricultural Standard (TAS X-XXXX)” in accordance with the application of the Agricultural Standards Act B.E. 2551 (2008).



**NOTIFICATION OF THE NATIONAL COMMITTEE ON  
AGRICULTURAL COMMODITY AND FOOD STANDARDS  
SUBJECT: THAI AGRICULTURAL COMMODITY AND FOOD STANDARD:  
DRIED LONGAN FLESH  
B.E. 2549 (2006)**

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The resolution of the 1/2549 session of the National Committee on Agricultural Commodity and Food Standards dated 8 June B.E. 2549 (2006) endorsed the Thai Agricultural Commodity and Food Standard entitled Dried Longan Flesh. This standard would be of benefits for quality improvement, facilitating trade and protecting consumers.

By virtue of the Cabinet Resolution on Appointment and Authorization of the National Committee on Agricultural Commodity and Food Standards dated 19 November B.E. 2545 (2002), the Notification on Thai Agricultural Commodity and Food Standard entitled Dried Longan Flesh is hereby issued as voluntary standard, the details of which are attached herewith.

Notified on 31 July B.E. 2549 (2006)

Khunying Sudarat Keyuraphan

Minister of Agriculture and Cooperatives

Chairperson of the National Committee on Agricultural Commodity and Food Standards

# THAI AGRICULTURAL STANDARD

## DRIED LONGAN FLESH

### 1 SCOPE

This standard applies to dried longan flesh obtained from fresh longan of *Dimocarpus longan Lour.*, of *Sapindaceae* family. The product shall be offered for direct consumption or intended for repacking. Dried longan flesh for further processing is excluded.

### 2 DEFINITIONS

The definitions of the terms used in this standard are as follows:

2.1 *Dried Longan Flesh* known as commercial type of *Golden Dried Longan Flesh* : the product obtained from fresh mature longan which has been classified, shelled, pitted and dehydrated. The obtained product shall meet the specified requirements, suitable for consumption and shall be packed in a container, which can prevent contamination and moisture.

2.2 *Water activity ( $a_w$ )* : the figure representing free water which has effect on the growth of microorganism and change of food. Water activity is the ratio of the water vapour pressure of the product to the vapour pressure of pure water at the same temperature.

### 3 QUALITY

#### 3.1 GENERAL

Dried longan flesh of all classes shall be yellow in colour ranging from light yellow, golden yellow to dark yellow. The product in the same package shall have consistent colour. The product shall have flavour and texture characteristic to the variety. The product shall be dry, non-sticky to the hands, be free from sour taste. The product shall have odour characteristics for dried longan flesh and shall be free from odour foreign to the product and abnormal flavour. The product shall be free from extraneous matter such as insect or its segment, animal hair, soil, sand or metal particle.

#### 3.2 CHEMICAL REQUIREMENT

Dried longan flesh of all classes shall comply with the following requirements:

- 3.2.1 Moisture content of not less than 12% and not more than 18%
- 3.2.2 Water activity not exceeding 0.6
- 3.2.3 Total soluble acids not lower than 80 °Brix
- 3.2.4 pH not lower than 6.2.

### 3.3 CLASSIFICATION

Dried longan flesh according to this standard is classified into 3 classes as follows:

3.3.1 Class I

3.3.2 Class II

3.3.3 Class III

Classification according to physical requirements is given in Table 1 as follows.

**Table 1 Physical requirements of dried longan flesh**

Quality factor	Requirement		
	Class I	Class II	Class III
Flesh thickness	Not less than 2 mm	Less than 2 mm	Less than 2 mm
Uniformity of size	Uniform, with deviation from the commercial size not more than 1% by number or weight of dried longan flesh	Rather uniform, with deviation from the commercial size not more than 10% by number or weight of dried longan flesh	Not uniform, with deviation from the commercial size more than 10% by number or weight of dried longan flesh

The defectives in each class shall not be more than the acceptance criteria given in Table 2.

**Table 2 Acceptance criteria**

Defects	Acceptance criteria (%by weight)		
	Class I	Class II	Class III
Crushed or Broken	1	3	15
Stalk (stem) or parts thereof	1	2	5

## 4 PACKAGING

Dried longan flesh shall be packed in the container which meets the quality, safety and hygiene characteristics and can maintain the product quality.

## 5 FOOD ADDITIVES

The type and amount of the food additives used shall comply with the relevant legal provisions and the requirements of the Thai Agricultural Standard on Food Additives.



## 6 CONTAMINANTS

The type and amount of the contaminant present in dried longan flesh shall comply with the relevant legal provisions and the requirements of the Thai Agricultural Standard on Contaminants.

## 7 PESTICIDE RESIDUES

The type and amount of the pesticide residue present in dried longan flesh shall comply with the relevant legal provisions and the requirements of the Thai Agricultural Standard on Pesticide Residues.

## 8 HYGIENE

8.1 The production and treatment of dried longan flesh in all steps including storage and transportation shall be in hygienic manner so as to prevent contamination which may represent a hazard to health.

8.2 Microorganisms present in all classes of dried longan flesh shall not exceed the amount given in Table 3.

**Table 3 Microorganisms in dried longan flesh**

Microorganism	n	c	m	M
Yeast	5	2	$1 \times 10^4$ cfu/g <sup>1</sup>	$1 \times 10^4$ cfu/g
Mold	5	0	500 cfu/g	-
<i>Escherichia coli</i>	5	0	Less than 3 MPN/g <sup>2</sup>	-
<i>Staphylococcus aureus</i>	5	0	Less than 500 cfu/g	-
<i>Salmonella spp.</i>	5	0	Nil in 25 g	-
<i>Clostridium perfringens</i>	5	0	Less than 10 cfu/g	-

**Note:**

n = sample size from each lot

c = maximum sample size in which microorganisms are found in the amount greater than m

m = acceptable amount of microorganisms found in the sample

M = maximum amount of microorganisms found in the sample resulted in the lot rejection.

Where M is not specified, m and c shall be used as criteria

Where M is specified, if the amount of microorganisms found is greater than m, the number of sample shall not be greater than c. However, the amount of microorganisms found shall not be greater than M.

<sup>1</sup> cfu/g : colony forming unit per gram

<sup>2</sup> MPN/g : most probable number per gram

For the manufacturers who have quality assurance system and satisfactory production history, the number of sampling or the sample size may be reduced.

## **9 LABELLING**

### **9.1 CONSUMER PACKAGES**

Each package shall be labelled visibly and legibly with, at least, the following information. The information shall not be fake or deceptive.

- (1) Name of the product “Dried longan flesh” or “Golden dried longan flesh”
- (2) Main ingredient in percentage of weight, approximately
- (3) Food additives, if any, according to the relevant legal provision
- (4) Class
- (5) Net content in g or kg
- (6) Name and address of the manufacturer or packer in case of local product. Name and address of importer in case of imported product
- (7) Country of origin
- (8) Lot or lot code
- (9) Date of Manufacture, expiration date or date of minimum durability (best before)
- (10) Instruction for use or storage, e.g. storage at the temperature of 2°C - 10°C will keep the original colour and prolong the storage duration
- (11) The labelling shall be in Thai. For the product to be exported, labelling may be in foreign language

### **9.2 NON-RETAIL CONTAINERS**

Each package shall bear the information consisting of, at least, name of the product “Dried longan flesh” or “Golden Dried longan flesh”, lot, name and address of the manufacturer or packer for local product, name and address of the importer for imported product, date of manufacture, expiration date or date of minimum durability, food additives (if any), instruction for storage. This information may appear in the document accompanying the goods or in the label or on the package. However, identification of lot and name and address of the manufacturer or packer, if already declared explicitly in the document accompanying the goods, can be represented by a code mark.

## **10 SAMPLING**

Sampling shall be carried out in accordance with the relevant legislation provision and the requirement of the Thai Agricultural Standard on Sampling.

## 11 ANALYSIS

Analysis is given in the following Table 4. (The latest edition of the reference shall be used).

**Table 4 Analysis**

<b>Provision</b>	<b>Method</b>	<b>Principle</b>
1. General quality (3.1)	Visual inspection and sensory analysis	Subject measurement
2. Moisture (3.2.1)	AOAC 934.06 or equivalent	Gravimetry
3. Water activity (3.2.2)	Water activity meter	$a_w$ -Value Analyzer
4. Total soluble solids (3.2.3)	AOAC 932.12 or equivalent	Refractometry
5. pH (3.2.4)	AOAC 970.21 or equivalent	Electrometry
6. Thickness of flesh (3.3)	Visual inspection or measurement using micrometer	Subjective measurement or objective measurement
7. Uniformity of size (3.3)	Visual inspection, or weigh the separated deviating size from the commercially nominated size, expressed in percentage	Subjective measurement or gravimetry
8. Crushed or broken pieces (3.3)	Visual inspection and weigh the separated broken pieces, expressed in percentage of the sample	Subjective measurement and gravimetry
9. Dried longan flesh with stalk (stem) or parts thereof (3.3)	Visual inspection and weigh the separated broken pieces, expressed in percentage of the sample	Subjective measurement and gravimetry
10. Yeast (8.2)	BAM (Bacteriological Analytical Manual) 2001 Chapter 18 or the equivalent	Direct plating
11. Mold (8.2)	BAM (Bacteriological Analytical Manual) 2001 Chapter 18 or the equivalent	Direct plating
12. <i>Escherichia coli</i> (8.2)	BAM (Bacteriological Analytical Manual) 2001, Chapter 12 or the equivalent	MPN
13. <i>Staphylococcus aureus</i> (8.2)	BAM (Bacteriological Analytical Manual) 2001, Chapter 12 or the equivalent	Direct plating

<b>Provision</b>	<b>Method</b>	<b>Principle</b>
14. <i>Salmonella</i> spp. (8.2)	BAM (Bacteriological Analytical Manual) 2003, Chapter 5 or the equivalent	Pre-enrichment /enrichment and biochemical and serological confirmation
15. <i>Clostridium perfringens</i> (8.2)	BAM (Bacteriological Analytical Manual) 2001, Chapter 16 or the equivalent	Plating and/or enrichment and biochemical confirmation
16. Net weight (9.1)	Weighing	Gravimetry

## ANNEX A

### SAMPLING

Annex A gives sampling of dried longan flesh for convenience of use.

#### A.1 DEFINITIONS

The following definitions applies:

A.1.1. *Lot* means product of the same origin, manufactured with the same process, packed in the same type of package, delivered or sold in the same transaction so as to obtain the product with uniform quality and characteristics.

A.1.2. *Sampling plan* means

- (1) Primary sampling plan
- (2) Secondary sampling plan

#### A.2 PRIMARY SAMPLING PLAN

Sampling by random on dried longan flesh of the same lot in accordance with the sample size given in Table A.1 or A.2 for inspection of container, marking and labelling and net weight.

**Table A.1 Primary sampling plan for container of 10 kg and over**

Lot size (Number of container unit)	Primary sample size (Number of container unit)
Less than and including 100	3
101 to 500	8
501 to 2,500	13
More than 2,500	min 18

**Table A.2 Primary sampling plan for containers smaller than 10 kg**

Lot size (Number of container unit)	Primary sample size (Number of container unit)
Less than and including 500	8
501 to 3,200	13
3201 to 35,000	14
More than 35,000	min 25

### A.3 SECONDARY SAMPLING PLAN

Sample shall be taken for laboratory analysis from the primary sample as follows:

A.3.1. Sampling and acceptance for physical analysis consisting of general quality, and defects such as hole at the stalk, crack, bruising and rain rot.

Sample shall be drawn randomly from the primary sample and placed in a tightly sealed container, 500 g from each sample. Inspection shall be carried out according to clauses 3.1 and 3.3 (Table 1). The lot shall be considered complying with 3.1 and 3.3 provided that the defects found do not exceed the acceptance number given in Table A.3.

**Table A.3 Sampling plan and acceptance for physical test of dried longan flesh**

[3.1, 3.3 (Tables 1)]

<b>Primary sample size</b> (Number of container unit)	<b>Secondary sample size</b> (Number of container unit)	<b>Acceptance number</b> (Number of container unit)
3	1	0
8	3	0
13	8	1
18	13	2
min 25	min 20	3

A.3.2. Sampling and acceptance for chemical test (moisture, water activity, total soluble solids and pH)

Sample shall be drawn equally from primary sample to obtain a total weight of 500 g for chemical analysis. The lot shall be deemed to be acceptable if it complies with the requirement of 3.2.

A.3.3. Sampling and acceptance for microbiological analysis

Sample shall be drawn randomly from primary sample, 300 g from each sample, to obtain a total weight of 5 containers, and kept in a tightly sealed container for microbiological analysis. The lot shall be deemed to be acceptable if it complies with the requirement of 8.2.

**ANNEX B****UNIT**

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

<b>Measurement</b>	<b>Unit</b>	<b>Symbols</b>
Mass	gram	g
Mass	kilogram	kg
Length	millimeter	mm
Temperature	degree celsius	°C