



THAI AGRICULTURAL STANDARD

TAS 10-2006

DRIED WHOLE LONGAN FRUIT

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

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Dried whole longan fruit is an important processed agricultural product and a significant export of Thailand. To promote the acceptance of the Thai dried whole longan fruit locally and in the international market, to provide consumer protection and to increase export of the product, the Ministry of Agriculture and Cooperatives considers that it is appropriate to develop a standard for dried whole longan fruit.

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 WHOLE LONGAN FRUIT
B.E. 2549 (2006)**

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 Whole Longan Fruit. 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 Whole Longan Fruit 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 WHOLE LONGAN FRUIT

1 SCOPE

This standard applies to dried whole longan fruit obtained from fresh longan of *Dimocarpus longan Lour.*, of *Sapindaceae* family. The product shall be offered for direct consumption or intended for repacking.

2 DEFINITIONS

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

2.1 *Dried Whole Longan Fruit*: the product obtained from fresh longans, which have reached an appropriate degree of development and ripeness from which the skin has not been removed and have been subject to dehydration. The obtained product shall meet the specified requirements and fit for consumption. It 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 microorganisms and changes 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.

2.3 *Thythoptera* or *rain rot* : stains caused by the seeping of longan syrup through the bruise or hole at the stalk during dehydration

3 QUALITY

3.1 GENERAL

Dried whole longan fruit of all classes shall have the skin of brown or reddish dark brown colour. The skin shall be free from dark colour or burnt. Mycelium shall not be present. The flesh shall be dry, non-sticky to the hand or attached to the pit. It shall have the odour characteristics of the variety. Its flavour shall be sweet, being free from sour or bitter taste.

3.2 CHEMICAL REQUIREMENT

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

3.2.1 Moisture content for the whole fruit (including flesh, pit and skin) not exceeding 13.5% or not exceeding 17% for the flesh only

3.2.2 Water activity of the flesh not exceeding 0.6

3.2.3 Total soluble solids of the flesh not lower than 76 °Brix

3.2.4 pH of the flesh not lower than 5.0.

3.3 CLASSIFICATION

Dried whole longan fruit according to this standard is classified into 4 classes as follows:

3.3.1 Extra Class

3.3.2 Class I

3.3.3 Class II

3.3.4 Class III

The defects in each class shall not be more than the acceptance number given in Table 1.

Table 1 Acceptance criteria

| Defects | Acceptance Number (Percentage of weight or number of fruits) | | | |
|-----------------------|---|---------|----------|-----------|
| | Extra Class | Class I | Class II | Class III |
| Hole at the stem | 1 | 2 | 5 | 7 |
| Crack | 1 | 2 | 3 | 4 |
| Bruising ¹ | 3 | 5 | 7 | 10 |
| Rain rot ² | 1 | 5 | 10 | 15 |

4 SIZING

4.1 SIZE CODE

Dried whole longan fruit in this standard is classified into 4 sizes according to the diameter of the fruit as in Table 2.

Table 2 Provision concerning sizing

| Size Code | Diameter(cm) |
|-----------|--------------|
| 1 | >2.5 |
| 2 | >2.2-2.5 |
| 3 | >1.9-2.2 |
| 4 | 1.5-1.9 |

PT¹ Bruising

The total bruising for extra class shall not exceed 15% of the skin of the whole fruit. For classes I, II and III, bruising can be wider than 15% but not more than 50% of the skin area of the whole fruit.

² Rain rot

The total area of rain rot for all classes can be 10% of the skin area of the whole fruit.

4.2 TOLERANCE

For all classes, the number of longans corresponding to the size immediately above or below that indicated on the package for longans in each lot shall not be more than 5%.

5 PACKAGING

Dried whole longan fruit shall be packed in a container which meets the quality, safety and hygiene characteristics and can keep the quality of the product.

6 CONTAMINANTS

The type and amount of the contaminants present in the product shall comply with the relevant laws and the requirement of the Thai Agricultural Standard on Contaminants.

7 PESTICIDE RESIDUES

The type and amount of the pesticide residue present in the product shall comply with the relevant laws and the requirement of the Thai Agricultural Standard on Pesticide Residues.

8 HYGIENE

8.1 The production and treatment of dried whole longan fruit 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 dried whole longan fruit of all classes shall not exceed the amount given in Table 3.

Table 3 Provision concerning microorganisms present in dried whole longan fruit (excluding pit and skin)

| Microorganism | n | c | m |
|---------------|---|---|------------------------|
| Mold | 5 | 0 | 500 cfu/g ³ |

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

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

³ cfu/g : colony forming unit per gram.

9 LABELLING**9.1 CONSUMER PACKAGES**

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

- (1) Name of the product “Dried whole longan fruit”
- (2) Main ingredient in percentage of weight, approximately
- (3) Class and size code
- (4) Net content in g or kg
- (5) Name and address of the manufacturer or packer for local product. Name and address of importer in case of imported product.
- (6) Country of origin
- (7) Lot or lot code
- (8) Date of manufacture, expiration date or date of minimum durability (best before)
- (9) The labelling shall be in Thai. For the product to be exported, labelling can be in foreign language

9.2 NON-RETAIL CONTAINERS

Each package shall bear the information consisting of, at least, name of the product “Dried whole longan fruit”, lot, name and address of the manufacturer or packer for local product or name and address of importer in case of imported product, date of manufacture, expiration date or date of minimum durability. 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 legal 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 references shall be used).

Table 1 Analysis

| Provision | Method | Principle |
|---|---|------------------------|
| 1. General quality (3.1) | Visual inspection and sensory analysis | Subjective 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. Fruit with hole at the stalk(stem) (3.3) | Visual inspection and weigh or count the separated defective fruit, expressed in percentage of weight or the number of fruit | Subjective measurement |
| 7. Crack (3.3) | Visual inspection and weigh or count the separated defective fruit, expressed in percentage of weight or the number of fruit | Subjective measurement |
| 8. Bruising (3.3) | Visual inspection and weigh or count the separated defective fruit, expressed in percentage of weight or the number of fruit | Subjective measurement |
| 9. Rain rot (3.3) | Visual inspection and separate the fruit with rain rot wider than 10 % of the skin area of the whole fruit, weigh or count the number of fruit, expressed as percentage of weight or the number of fruit. | Subjective measurement |
| 10. Mold (8.2) | BAM (Bacteriological Analytical Manual) (2001) Chapter 18 or the equivalent | Direct plating |
| 11. Net weight (9.1) | Weighing | Gravimetry |

ANNEX A

SAMPLING

Annex A gives sampling of dried whole longan fruit 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 whole longan fruit 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, thickness of flesh, Uniformity of size, crush and broken pieces and dried longan flesh with stem or stalk or part thereof

Sample shall be drawn randomly from the primary sample and placed in tightly sealed container, 500 g from each sample. Inspection shall be carried out according to clauses 3.1 and 3.3 (Table 1 and Table 2). 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 whole longan fruit
(3.1, 3.3, Tables 1 and 2)

| Primary sample size (Number of container unit) | Secondary sample size (Number of container unit) | Acceptance number (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 300 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 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:

| Measurement | Unit | Symbols |
|--------------------|-------------|----------------|
| Mass | gram | g |
| Mass | kilogram | kg |
| Length | centimeter | cm |