



**THAI AGRICULTURAL STANDARD**

**TAS 1508-2008**

**GARLIC**

**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**

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Garlic is a Thai agricultural commodity which has a high potential in the production and export. The establishment of a standard for this commodity is aiming for promoting the development of production in terms of both quality and safety. Therefore, it is deemed necessary for the Ministry of Agriculture and Cooperatives to establish the standard on garlic so as to be reliable and recognized both domestically and internationally. More importantly, it will be of great benefits for safety of consumers as well as for export promotion.

The provisions of this standard are based on the information of the following documents:

The Study on the Produce of Important Characteristic Indices which are used as Criteria for Quality Classification and Size Code Determination of the Garlic Project of the National Bureau of Agricultural Commodity and Food Standards B.E.2549 (2006) in cooperation with Kasetsart University.

UNECE 1998. The UNECE Standard for Garlic (UNECE STANDARD FFV-18). The United Nations Economic Commission for Europe.

***Remark:***

The standard title has been revised from “Thai Agricultural Commodity and Food Standard (TACFS)” to “Thai Agricultural Standard (TAS)” in accordance with the enforcement 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:  
GARLIC  
B.E. 2551 (2008)**

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The resolution of the 1/2551 session of the National Committee on Agricultural Commodity and Food Standards dated 11 August B.E. 2551 (2008) endorsed the Thai Agricultural Commodity and Food Standard entitled Garlic for the benefit of development of agricultural commodity and food which is safe and in accordance with the standard.

By virtue of the Cabinet Resolution on Appointment and Authorization of the National Committee on Agricultural Commodity and Food Standards dated 5 August B.E. 2551 (2008), the Notification on Thai Agricultural Commodity and Food Standard entitled Garlic is hereby issued as voluntary standard, the details of which are attached herewith.

Notified on 14 August B.E. 2551 (2008)

Mr. Somsak Prissana-nanthakul

Minister of Agriculture and Cooperatives

Chairperson of the National Committee on Agricultural Commodity and Food Standards

# THAI AGRICULTURAL STANDARD

## GARLIC

### 1 SCOPE

This standard applies to commercial varieties of garlic grown from *Allium sativum* L. of Alliaceae family, to be supplied sufficiently dry<sup>1</sup> for consumption after preparation and packing, but excluding those for processing.

The Garlic of this standard is divided into 2 types:

- (1) Garlic bulb
- (2) Garlic clove

### 2 QUALITY

#### 2.1 MINIMUM REQUIREMENTS

2.1.1 In all classes, subject to the special provisions for each class and the tolerances allowed, the garlic shall be:

- (1) garlic bulb shall be whole covered with outer sheaths, whereas garlic clove shall be covered with complete sheath ,
- (2) complete condition and firm flesh<sup>2</sup>,
- (3) free of sprouting,
- (4) free of rotting or deterioration such as to make it unfit for consumption,
- (5) free of abnormal long protuberance at the clove top,
- (6) clean, practically free of any visible foreign matter,
- (7) practically free of pests affecting the general appearance of the produce,
- (8) practically free of produce damage caused by pests,
- (9) free of abnormal external moisture, excluding condensation following removal from cold storage,
- (10) free of damage caused by high and/or low temperature and
- (11) free of any foreign smell and/or abnormal taste.

2.1.2 The garlic shall be properly mature, appropriate to the variety and geographical location. They shall be carefully harvested, postharvest handled, packed and transported in order to obtain the produce in acceptable condition on arrival at the destination.

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<sup>1</sup> noticeable from the dryness of all the sheaths of the bulb and that of the clove.

<sup>2</sup> the garlic flesh is plump, neither wilt nor shrink.

## 2.2 CLASSIFICATION

The garlic in this standard is classified in three classes defined below:

### 2.2.1 Extra Class

The garlic in this class shall be of superior quality and the characteristics of the variety as the following:

(1) Garlic bulb:

- all cloves are intact,
- they are tightly formed,
- outer sheaths are complete, free of ripping, and
- roots are well trimmed close to the base, provided there is no damage or wound at the base.

(2) Garlic clove:

- uniform shape.

The garlic in (1) and (2) above shall be free of defects, with the exception of very slight superficial and not obvious defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and the presentation in the package.

### 2.2.2 Class I

The garlic in this class shall be of good quality and the characteristics of the variety as the followings:

(1) Garlic bulb:

- all cloves are intact,
- the cloves are somewhat tightly formed,
- slightly ripped of outer sheaths is allowed,
- root shall be trimmed off with the remaining less than 0.5 cm in length are allowed.

(2) Garlic clove:

- there may not be uniform in shape.

Slight defects in (1) and (2) are allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and the presentation in the package; and not affecting the garlic flesh quality.

### 2.2.3 Class II

This class applies only for the garlic bulb which does not qualify for inclusion in the higher class, but satisfies the minimum requirements specified in Section 2.1 with the following allowable defects, provided that the produce still retains its essential characteristics of the quality, the keeping quality and presentation in the package:

- outer sheath ripping off or part thereof missing,
- healed wound or slightly rubbed wound,
- abnormal shape, and
- a maximum of 2 garlic cloves per bulb may be missing.

### 3 SIZING

3.1 Size of the garlic bulb is determined by diameter measured at the widest part of the bulb as the following:

**Table 1 Size of the garlic bulb**

Size Code	Diameter (mm)
1	>3.5
2	>3.0 to 3.5
3	>2.5 to 3.0
4	1.5 to 2.5
5	<1.5

3.2 Size of garlic clove is either determined by weight per clove or the number of clove per 100g as the followings:

**Table 2 Size of garlic clove**

Size Code	Weight per Clove (g)	Number of Clove per 100g
1	> 3.0	= or < 30
2	2.0 to 3.0	> 30 to 50
3	< 2.0 to 1.0	> 50 to 100
4	< 1.0	> 100

The classification and provisions concerning sizing in this standard may be applied in the trade deal. The classification may be jointly implemented with the sizing provisions in order to provide the trade grading which the trading partners may call it differently. This depends on the requirements of the trading partners or the seasonal limitation.

### 4 TOLERANCES

Tolerances in respect of quality and size shall be allowed for produce in each package not satisfying the requirements of the class indicated.

#### 4.1 QUALITY TOLERANCES

##### 4.1.1 Extra Class

Not more than 10% by number or weight of the garlic not satisfying the requirements of Extra Class, but meeting those of Class I, or coming within the tolerances of Class I.

##### 4.1.2 Class I

Not more than 10% by number or weight of the garlic not satisfying the requirements of Class I, but meeting those of Class II, or coming within the tolerances of Class II.



#### 4.1.3 Class II

Not more than 15% by number or weight of the garlic not satisfying neither the requirements of Class II nor the minimum requirements, but it shall exclude the garlic that are unfit for consumption.

#### 4.2 SIZE TOLERANCE

Not more than 10% by number or weight of all size codes of the garlic falling within the size immediately above or below those indicated in Section 3.

### **5 PACKING AND PRESENTATION**

#### 5.1 UNIFORMITY

The contents in each package shall be uniform in respect of variety, quality, size, and color. The visible part of garlic in the package shall be representative of the entire contents.

#### 5.2 PACKAGING

The garlic shall be packed in such a way as to maintain the quality of the produce properly. The materials used inside the package shall be clean and of a quality to protect the garlic from any damages affecting its quality. The use of materials, in particular paper or stamps bearing trade specifications is allowed, provided that the printing or labeling has been done with a non-toxic ink or glue.

#### 5.3 DESCRIPTION OF CONTAINERS

The containers shall be of good quality, hygiene, good ventilation, free of abnormal smell and foreign matter, and have resistant characteristics to withstand transportation and preserve the produce.

#### 5.4 PRESENTATION

The garlic shall be presented in either one of the following forms:

##### 5.4.1 Garlic bulbs are divided into 2 types:

- (1) Single bulb type with trimmed roots and leaves, the leaves are not longer than 1.0 cm. This condition may be changed according to the trade partners' specification.
- (2) Bunched type that garlic bulbs with trimmed roots are tied together into bunches.

##### 5.4.2 Garlic clove.

### **6 MARKING AND LABELLING**

#### 6.1 CONSUMER PACKAGES

Each package shall bear the following particulars, legible, and without false or deceptive information.

(1) Nature of Produce

The word of “Garlic” and/or “Variety of garlic” shall be indicated,

(2) Net weight in gram or kilogram,

(3) Producer’s and Distributor’s Information

Name and site address of producer or re-packer or distributor and operation site. Name and address of the head office of the producer or of the re-packer may be labeled. In case of import, there shall be name and site address of the importer,

(4) Origin of produce

Indicate country of origin, except the garlic domestically produced for local market, and

(5) Language

Label of produce shall be in Thai. Produce label for export can be in any language.

## 6.2 NON-RETAIL CONTAINERS

Each container shall bear statement indicated in the accompanying document, labels or displayed on the container. The statement shall be legible, indelible and without false or deceptive information as following:

(1) Nature of Produce

The word of “Garlic” and/or “Variety of garlic” shall be indicated,

(2) Class,

(3) Size, if classified by size,

(4) Net weight in gram or kilogram,

(5) Producer’s and Distributor’s Information

Name and site address of producer or re-packer or distributor and commercial identification code (if any). Name and address of the head office of the producer or of the re-packer may be labeled. In case of import, there shall be name and site address of the importer,

(6) Origin of produce

Indicate country of origin, except the garlic domestically produced for local market, and

(7) Language

Label of produce must be in Thai. Produce label for export can be in any language.

## 6.3 CERTIFICATION MARK

Certification mark of this standard shall be complied with criteria and conditions provided by the Committee on Agricultural Standards.

## 7 CONTAMINANTS

In compliance with the provisions of the relevant laws and requirements under the Thai Agricultural Standard on Contaminants.

**8 PESTICIDE RESIDUES**

In compliance with the provisions of the relevant laws and requirements under the Thai Agricultural Standard on Pesticide Residues: Maximum Residue Limits (TAS 9002) and Pesticide Residues: Extraneous Maximum Residue Limits (TAS 9003).

**9 HYGIENE**

Harvesting, handlings including storage, packing and transportation shall be hygienically practiced in order to prevent any contaminations which will be harmful to the consumer.

**10 METHODS OF ANALYSIS AND SAMPLING**

In compliance with the provisions of the relevant laws and requirements under the Thai Agricultural Standard on Analytical and Sampling Methods.

## ANNEX A

## GARLIC ILLUSTRATION



**Figure A1** Garlic bulb (single bulb) and garlic clove



**Figure A2** Garlic bulb (bunched presentation)

**ANNEX B****UNIT**

The unit and symbol used in this standard and the unit of SI (International System of Units or *Le Système International d'Unités*) recognized to be used are as follows:

<b>Measurement</b>	<b>Unit</b>	<b>Symbols</b>
Mass	gram	g
Length	centimeter	cm