



THAI AGRICULTURAL STANDARD

TAS 15-2007

AROMATIC COCONUT

**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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Aromatic coconut is an agricultural commodity that Thailand has the potential to produce, and it has the trend for more exportation. The establishment of aromatic coconut standard is significant to assist the quality development in the production. To promote good quality production of aromatic coconuts that qualify the standard and the fruit is better accepted by both the domestic and international trade. The Ministry of Agriculture and Cooperatives deems it proper to establish a standard for aromatic coconut.

The provisions of this Thai Agricultural Commodity Standard are based upon information from a study project on important characteristic indices of the fruit that are used as criteria in indicating quality, classification and size data of which are considered for grouping to indicate size code of food crops of the Thai Bureau of Agricultural Commodity and Food Standards. The operation was cooperated by the Department of Agriculture, Ministry of Agriculture and Cooperatives.

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:
AROMATIC COCONUT
B.E. 2550 (2007)**

The resolution of the 2/2549 session of the National Committee on Agricultural Commodity and Food Standards dated 28 August B.E. 2550 (2007) endorsed the Thai Agricultural Commodity and Food Standard entitled Aromatic Coconut. 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 3 April B.E. 2550 (2007), the Notification on Thai Agricultural Commodity and Food Standard entitled Aromatic Coconut is hereby issued as voluntary standard, the details of which are attached herewith.

Notified on 20 September B.E. 2550 (2007)

Mr. Theera Sutabutra

Minister of Agriculture and Cooperatives

Chairperson of the National Committee on Agricultural Commodity and Food Standards

THAI AGRICULTURAL STANDARD

AROMATIC COCONUT

1 SCOPE

This standard applies to commercial varieties of aromatic coconut (fragrant coconut or Maphrao Num Hom) that had mutated from Moo See Kheaw which was a dwarf with aromatic water mutant. The fruit which is grown from *Cocos nucifera* L. of Arecaceae family. The fruit is presented in trimmed or polished coconut or other forms for fresh consumption.

2 DEFINITION OF PRODUCE

2.1 The trimmed coconut: the fruit exocarp is partly or totally removed, the fruit is then trimmed to tapered cylinder form with cone-cover top (the stem end or spikelet end of the fruit) as shown in figure 1 and 2 respectively or only trimmed on the top part into cone-cover shape as shown in figure 3. While the bottom part (stylar end of the fruit) of all fruits is cut flat.



Figure 1. Trimmed coconut with the green all green exocarp removal.



Figure 2. Trimmed coconut, part of exocarp is cut; trimmed into tapered- cylinder form with cone-cover top



Figure 3. Trimmed coconut, part of the green exocarp is cut; only the top is trimmed into cone-cover shape.

2.2 Polished or ground coconut: all the mesocarp is totally removed and that at the stem end (near the spikelet) is spared for trimming into cone cover (figure 4) or standing base (figure 5) in order to protect the weak part of the coconut. The shell is evenly polished or ground as shown in figure 4 and 5.



Figure 4. The polished coconut with cone cover stem end.



Figure 5. The polished coconut with cylindrical mesocarp stem end flat base

3 PROVISIONS CONCERNING QUALITY

3.1 MINIMUM REQUIREMENTS

3.1.1 In all classes, subject to the special provisions for each class and the tolerances allowed, the aromatic coconuts must be as follows:

- (1) The juice has the aroma in accordance to the variety;
- (2) Fresh with proper harvesting maturity;
 - trimmed coconut has 1 ½¹ to 2 layers² of pulp formed;
 - polished coconut has 1 ½¹ to 2 ½ layers³ of pulp formed;
- (3) Clean, practically free of any visible foreign matter ;
- (4) Practically free of pests affecting the general appearance of the produce ;
- (5) Practically free of damage caused by pests affecting the produce quality;
- (6) The visible bruising or defects on the external surface must not affect the internal quality;
- (7) Free of abnormal external moisture, excluding condensation following removal from cold storage ;
- (8) Free from damage caused by low and/or high temperature ;

^{1/} 1 ½ layers of pulp: the pulp near stem end is rather thin with transparent characteristic, whereas that near the stylar end is rather thick with light cream color.

^{2/} 2 layers of pulp: the pulp of the whole fruit is rather thick with light cream color whereas that near the stem end has a small portion of transparent pulp which is tender enough to be removed by spoon.

^{3/} 2 ½ layers of pulp: similar in characteristic to the 2 layers, but without the transparent pulp.

(9) Free of any foreign smell and/or abnormal taste ;

3.1.2 Aromatic coconut must be properly mature and must be correctly harvested, post harvest handled and transported in order to obtain the produce in acceptable condition on arrival at the destination.

3.1.3 The proper maturity for untrimmed coconut is determined on the criteria as indicated in Annex B.

3.2 CLASSIFICATION

Aromatic coconut is classified in three classes defined below:

3.2.1 Extra Class

Aromatic coconut in this class must be of superior quality. They must be free of defects, with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

3.2.2 Class I

Aromatic coconut in this class must be of good quality, and slight defects may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package. The total defects per fruit do not exceed 5% of the total surface area, and do not affect the internal fruit quality.

3.2.3 Class II

This class includes aromatic coconuts which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 3.1.

They still retain the produce quality, the keeping quality and presentation in the package. The total defects per fruit do not exceed 10% of the total surface area and do not affect the internal fruit quality.

4 PROVISIONS CONCERNING SIZING

Aromatic coconut size is determined by either circumference or weight of the fruit as follows:

4.1 The trimmed fruits weigh from 700 to 1,400 g⁴

4.2 The polished fruits are determined as shown in table 1.

⁴/ The trimmed coconuts: in trade 9 fruits are packed in one container, fruit size varies depending upon customer's requirement.

Table 1. Size Code of Polished Aromatic Coconut Fruits⁵

Size Code	Circumference (cm)	Weight (g)
1	> 35 to 40	> 600 to 850
2	> 30 to 35	> 450 to 600
3	27 to 30	350 to 450

The quality classification and provisions concerning sizing in this standard can be considered in the business by jointly applying them in order to set up a trade classification which may be named differently by the trade partners depending on their requirement or limited conditions due to seasons.

5 PROVISIONS CONCERNING TOLERANCES

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

5.1 QUALITY TOLERANCES

5.1.1 Extra Class

Five percent by number or weight of aromatic coconut not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerance of class I.

5.1.2 Class I

Ten percent by number or weight of aromatic coconut not satisfying the requirements of the class, but meeting those of Class II or, exceptionally, coming within the tolerance of class II.

5.1.3 Class II

Ten percent by number or weight of aromatic coconut not satisfying neither the requirements of the class nor the minimum requirements, but not affected by rotting.

5.2 SIZE TOLERANCE

5.2.1 For all classes ten percent by number or weight of the polished fruits not satisfying the requirements as regards sizing, but falling within the size immediately above and/or below those indicated in Section 3.

⁵/ The polished coconuts with cone cover at the stem end: different fruit size codes in trade are packed with the following number of fruits per container:

- size code 1 with 24 fruits;
- size code 2 with 32 fruits;
- size code 3 with 40 fruits.

The polished coconuts with cylindrical mesocarp stem end flat base are packed as follows:

- 25 kg foam box contains 36 fruits;
- 19 kg foam box contains 22 fruits.

6 PROVISIONS CONCERNING PRESENTATION

6.1 UNIFORMITY

The contents of each package must be from the same variety, uniform in quality, size and color. The visible part of the contents of the package must be representative of the entire contents.

6.2 PACKAGING

Aromatic coconut must be packed in such a way as to protect the produce properly. The materials used inside the package must be new, clean and of a quality such as to avoid causing any damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed, provided the printing or labeling has been done with non-toxic ink or glue. For the trim fruits may be covered by plastic.

6.3 DESCRIPTION OF CONTAINERS

The containers shall meet the quality, hygiene, and resistance characteristics to ensure suitable handling, shipping and preserving of the aromatic coconuts. Packages must be free of all foreign matters and smell.

7 MARKING OR LABELLING

7.1 CONSUMER PACKAGES

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

(1) Nature of Produce

If the produce is not visible from the outside, each package shall be labeled with the name of the produce "Aromatic coconut"

(2) Date of packing

(3) Number of fruits per package or net weight in grams or kilograms

(4) Distributor information

Name and address of the producer or packer produced or distributor or head office of producer in the country. Name and address of importer for imported aromatic coconut.

(5) Origin of produce

Country of origin, except it is produced for domestic distribution.

7.2 NON-RETAIL CONTAINERS

Each package must bear the following particulars, in the documents accompanying the shipment, in the label or on package, with legibly, indelibly marked and without false or deceptive information.

(1) Nature of Produce

If the produce is not visible from the outside, each package shall be labeled with the name of the produce “Aromatic coconut”

(2) Class;

(3) Size, if the produce is classified size or count by the number of fruits per container

(4) Number of fruits per package or net weight in grams or kilograms

(5) Distributor information

Name and address of the producer or packer produced or distributor or head office of producer in the country. Name and address of importer for imported mandarins.

(6) Origin of produce

Country of origin, except it is produced for domestic distribution.

(7) Language

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

7.3 OFFICIAL INSPECTION MARK OR CERTIFICATION MARK

Comply with the provisions and condition of the inspection or certification agency recognized by Ministry of Agriculture and Cooperatives of Thailand.

8 FOOD ADDITIVES

Comply with the provisions of relevant regulations and the Thai Agricultural Standard on Food Additives.

9 CONTAMINANTS

Comply with the provisions of relevant regulations and the Thai Agricultural Standard on Contaminant.

10 PESTICIDE RESIDUES

Comply with the provisions of relevant regulations and the Thai Agricultural Standard on Pesticide Residues.

11 HYGIENE

Comply with the provisions of relevant regulations and the Thai Agricultural Standard on Hygiene. Harvest and handling of various steps including storage and transport of aromatic coconuts must be carried out hygienically in order to prevent contamination which will be harmful to consumers.

12 METHODS OF ANALYSIS AND SAMPLING

Comply with the provisions of relevant regulations and the Thai Agricultural Standard on Methods of Analysis and Sampling.

ANNEX A

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
Length	centimeter	cm

ANNEX B**DETERMINATION OF PROPER MATURITY OF UNTRIMMED COCONUTS****(Section 3.1.3)**

Determination of proper maturity of untrimmed coconuts is based on the following criteria:

- (1) The dryness of the spikelet is about half of its length at normal environment.
- (2) Fruit color: the adjacent area between calyx and the fruit skin is white (pale) in color. This white area may become fade or disappear or remain in a small portion. When the skin is cut, the mesocarp appears white and fibers are creamy white.
- (3) Counting of the cluster: the to be harvested cluster is named the first one, the next one (younger) with the fist size fruit is the second, the third one (the next younger) is in the blooming stage with some amount of fertilized female flowers. This phenomenon indicates that the first cluster is at the proper mature stage

The cluster that will be harvested should have a younger cluster above at a slightly slant angle, the fruits of the younger cluster are about of the fist size, and the next younger one above is the blooming inflorescence.

- (4) Tapping sound: listening to the tapping sound requires experience specialist.