

UNOFFICIAL TRANSLATION



THAI AGRICULTURAL STANDARD

TAS 5-2015

MANGO

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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**Technical Committee on the Elaboration of Thai Agricultural Standards for
Good Agricultural Practices for Mango**

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Whereas, the Ministry of Agriculture and Cooperatives has issued the Thai Agricultural Standard entitled Mango (TAS 5–2003) dated November 6, B.E. 2546 (2003) and published in the General Announcement of the Royal Gazette dated December 19, B.E. 2546 (2003). In order to revise requirements to cover more commercial varieties of mango to such standard, the Agricultural Standards Committee considers it is appropriate to revise the existing standard to gain recognition on quality and safety domestically and internationally.

This agricultural standard is based on the following documents:

CODEX STAN 184-1993. *CODEX STANDARD FOR MANGOES*. Available at <http://www.fao.org/input/download/standards/315/CXS_184e.pdf> (viewed August-November 2014)

ASEAN STAN 2:2012. *ASEAN STANDARD FOR MANGOES*.



**NOTIFICATION OF MINISTRY OF AGRICULTURE AND COOPERATIVES
ON THE ESTABLISHMENT OF THAI AGRICULTURAL STANDARD:
MANGO
UNDER THE AGRICULTURAL STANDARDS ACT B.E. 2551 (2008)**

Whereas it is appropriate to revise the Thai Agricultural Standard for Mango in accordance with the Agricultural Standards Act B.E. 2551 (2008) to reflect the current situation.

By virtue of Sections 5, 15 and 16 of the Agricultural Standards Act, B.E. 2551 (2008), and the decision of the First Session dated 24 April B.E. 2558 (2015) of the Agricultural Standards Committee, the Minister of Agriculture and Cooperatives hereby issues this Notification as follows:

1. The Notification of the Ministry of Agriculture and Cooperatives on Thai Agricultural Standard: Mango dated 6 November B.E. 2546 (2003) is repealed.
2. The Thai Agricultural Standard for Mango (TAS 5-2015) is established as voluntary standard, details of which are attached herewith.

This shall be effective from the day after the date of its publication in the Royal Gazette.

Notified on 16 June B.E.2558 (2015)

(Mr. Petipong Pungbun Na Ayudhya)
Minister of Agriculture and Cooperatives

THAI AGRICULTURAL STANDARD

MANGO

1. SCOPE

1.1 This Thai agricultural standard applies to commercial varieties of mangoes grown from *Mangifera indica* L. of the *Anacardiaceae* family, to be supplied fresh to the consumer, both green and ripe fruit, after preparation and packaging.

1.2 This standard does not apply to mangoes for industrial processing.

2. QUALITY

2.1 Minimum requirements

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

- (1) whole with or without peduncle intact, when peduncle is present, it shall not be longer than 1.5 cm;
- (2) characteristics of the variety;
- (3) fresh;
- (4) sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- (5) clean and practically free of any visible foreign matter;
- (6) free of cracks;
- (7) practically free of pest affecting the general appearance;
- (8) practically free of damage caused by pest affecting flesh quality;
- (9) free of abnormal external moisture, excluding condensation following removal from cold storage;
- (10) free of damage caused by low and/or high temperature;
- (11) free of any foreign smell and/or taste.

2.1.2 Mangoes shall be at the appropriate harvesting period depending on variety, season, planting location and/or market or trading partner requirements, and arrive at the place of destination in a satisfactory condition.

2.2 Classification

Mangoes are classified into three classes as follows:

2.2.1 Extra Class

Mangoes in this class shall be of superior quality. They shall be free of defects in shape and skin with the exception of very slight superficial defects provided that these do not affect the general appearance, the flesh quality, the keeping quality and presentation in the package.

2.2.2 Class I

Mangoes in this class shall be of good quality. The following slight defects may be allowed provided that such defects do not affect the general appearance, the flesh quality, the keeping quality and presentation in the package:

- (1) slight defects in shape;
- (2) slight skin defects due to rubbing or sunburn and suberized stains due to resin exudation not exceeding the total areas provided in Table 1:

Table 1 Skin defect areas for Class I

Size Code	Total skin defect areas (cm ²)
1	5
2	4
3	3
4	2
5	1

- (3) scattering of suberized rusty lenticels due to fully matured and/or yellowing of green variety due to exposure to harsh sunlight, not exceeding 30% of the total surface areas and not showing any signs of necrosis.

2.2.3 Class II

This class includes mangoes which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 2.1. The following slight defects may be allowed provided that such defects do not affect the general appearance, the flesh quality, the keeping quality and presentation in the package:

- (1) defects in shape;
- (2) skin defects due to rubbing or sunburn and suberized stains due to resin exudation not exceeding the total areas provided in Table 2:

Table 2 Skin defect areas for Class II

Size Code	Total skin defect areas (cm ²)
1	7
2	6
3	5
4	4
5	3

(3) scattering of suberized rusty lenticels due to fully matured and/or yellowing of green variety due to exposure to harsh sunlight, not exceeding 40% of the total surface areas and not showing any signs of necrosis.

3. SIZING

Size is determined by weight of the fruit as shown in Table 3:

Table 3 Size of Mangoes

Size Code	Weight per fruit (g)	Maximum Permissible difference between fruit in each package (g)
1	>450	100
2	>350 – 450	50
3	>250 – 350	50
4	>150 – 250	50
5	100 - 150	25

Note: The classification of quality and sizing according to this standard may be combined to stipulate trade classification. Trading partners may name the trade classification differently depending on their requirements or seasonal limitations.

4. TOLERANCES

The following tolerances in respect of quality and size shall be allowed in each package for mangoes not satisfying the requirements of the class indicated:

4.1 Quality tolerances

4.1.1 Extra Class

Five percent by number or weight of mangoes not satisfying the requirements of Extra Class (Section 2.2.1), but meeting those of Class I (Section 2.2.2) or, exceptionally, coming within the tolerances of Class I (Section 4.1.2) is allowed.

4.1.2 Class I

Ten percent by number or weight of mangoes not satisfying the requirements of Class I (Section 2.2.2), but meeting those of Class II (Section 2.2.3) or, exceptionally, coming within the tolerances of Class II (Section 4.1.3) is allowed.

4.1.3 Class II

Ten percent by number or weight of mangoes satisfying neither the requirements of Class II (Section 2.2.3) nor the minimum requirements (Section 2.1), with the exception of produce affected by bruising, rotting or any other deteriorating rendering it unfit for consumption.

4.2 Size tolerances

For all classes, 10% by number or weight of mangoes in each package are permitted to be above or below the weight range of each size code in Table 4. However, the maximum permissible difference between the sizes of the smallest and largest fruits in each package shall be as follows:

Table 4 Maximum permissible difference between fruits in each package

Size Code	Normal Size Range (Table 3) (g)	Permissible size range (g)	Maximum permissible difference between fruits in each package (g)
1	>450	100	150
2	>350 – 450	50	75
3	>250 – 350	50	75
4	>150 – 250	50	50
5	100 - 150	25	25

5. PACKAGING

5.1 Uniformity

The contents of each package shall be uniform and contain only mangoes of the same variety, quality, size and colour. The visible part of the content of the package shall represent the entire contents.

5.2 Package

Mangoes shall be packed in a proper package for storage. The materials used inside the package shall be clean and of good quality. It shall be able to protect mangoes from damage affecting the quality. The uses of such materials, particularly of paper or stamps bearing trade specifications are allowed, provided that the printing or labelling has been done with non-toxic ink or glue.

The package shall be of good quality, hygiene, and resistance against transportation and to be able to protect mangoes from damage affecting its quality. Package shall be free of foreign matter and smell.

6. MARKING AND LABELLING

6.1 Consumer packages

The detailed information shall be appeared on the package, wrapping material, fastening material, tag or on the produce in a manner that is legible, clear, and indelible without false or deception as follows:

(1) Name of the produce

Mango and/or mango variety shall be labelled, if the produce is not visible from the outside.

(2) Net weight in metric system

(3) Class (optional)

(4) Size code and/or size (optional)

(5) Information of producer, packer, distributor, importer or exporter

Indicate the name and address of producer, packer, distributor, importer or exporter.

(6) Origin of produce

Indicate country of origin, except for domestic market.

(7) Language

Label of produce for domestic market shall be in Thai, however, foreign language may also be added. Label of produce for export can be in foreign language.

6.2 Non-retail containers

The detailed information shall be shown on the accompanying documents of the shipment, on the label, or on the container in a manner that is legible, indelible without false or deception as follows:

(1) Name of the produce

Mango and/or mango variety shall be labelled.

(2) Net weight in metric system

(3) Class

(4) Size code and/or size

(5) Information of producer, packer, distributor, importer or exporter

Indicate the name and address of producer, packer, distributor, importer or exporter.

(6) Origin of produce

Indicate country of origin, except for domestic market.

(7) Language

Label of produce for domestic market shall be in Thai, however, foreign language may also be added. Label of produce for export can be in foreign language.

6.3 Certification mark

The use of certification mark shall comply with the Ministerial Regulation of B.E. 2553 (2010) on Provisions Concerning Characteristics of Mark, Application and Display, and the relevant Notifications of National Bureau of Agricultural Commodity and Food Standards under the Agricultural Standards Act, B.E. 2551 (2008) and its amendments.

7. FOOD ADDITIVES

The food additives in mangoes shall comply with maximum levels established by relevant laws and regulations.

8. CONTAMINANTS

The contaminants in mangoes shall comply with maximum levels established by relevant laws and regulations.

9. PESTICIDE RESIDUES

The pesticide residues in mangoes shall comply with maximum residue limits established by relevant laws and regulations and the requirements under the Thai Agricultural Standards on Pesticide Residues: Maximum Residue Limits (TAS 9002) and Pesticide Residues: Extraneous Maximum Residue Limits (TAS 9003).

10. HYGIENE

Mangoes shall be produced under good hygienic practices in accordance with related standards on Good Agricultural Practices (GAP) and Thai Agricultural Standards on Good Manufacturing Practices for the Packing House of Fresh Fruits and Vegetables (TAS 9035) or other equivalent standards.

11. METHODS OF ANALYSIS AND SAMPLING

11.1 Analytical methods are shown in Table 5:

Table 5 Analytical methods

Criteria	Analytical methods	Principles
1. Quality : minimum requirements (Section 2.1.1)	Visual inspection and sensory testing	-
2. Defects in shape (Section 2.2)	Visual inspection	-
3. Skin defects (Section 2.2)	Visual inspection and measure skin defects for calculating to total surface area	-
4. Sizing (Section 3)	Weighing	Gravimetry

11.2 Sampling method

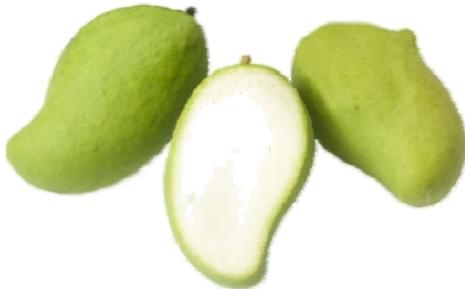
Sampling methods shall be in accordance with the relevant laws, and provisions of the Agricultural Standard on the method of sampling.

Appendix A**PHOTOS OF MANGOES**

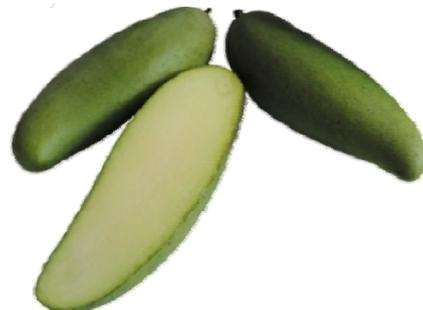
Khiaosawoey



Falan



Raet



Mankhunsi



Mandeaukao



Khiaomorakot

(a) Green mangoes

Figure A.1 Examples of commercial mango varieties (Section 1.1)

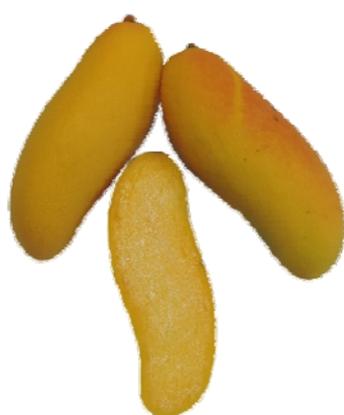
Source: Department of Agricultural Extension



Namdokmai Sithong



Okrong



Mahacharnok



Nuankum



Chok Anan



Thongdam

(b) Ripe mangoes

Figure A.1 Examples of commercial mango varieties (Section 1.1) (continued)

Source: Department of Agricultural Extension

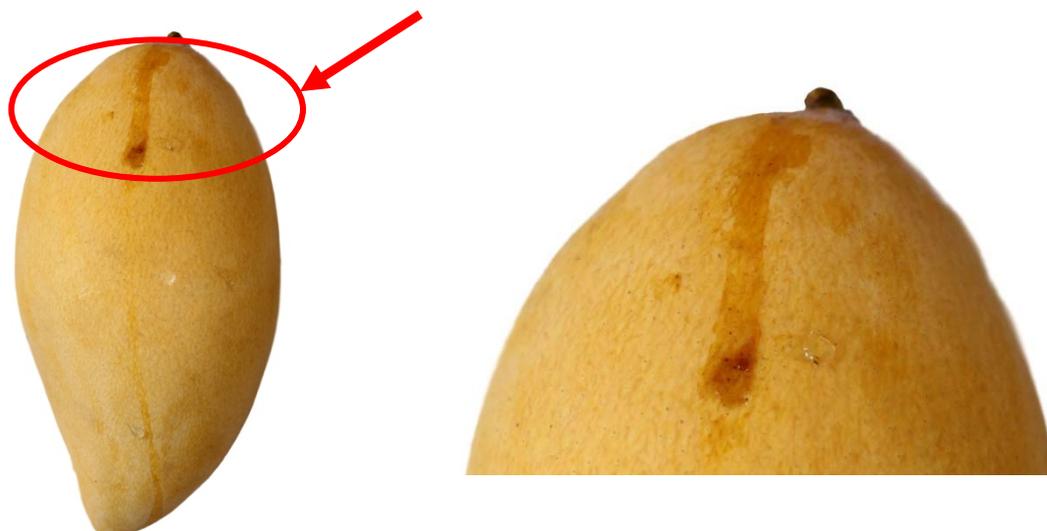


(a) Rubbing



(b) Scattering of suberized rusty lenticels due to fully matured

Figure A.2 Examples of skin defects (according to Section 2.2.2 and 2.2.3)



(c) suberized stains due to resin exudation

Figure A.2 Examples of skin defects (according to Section 2.2.2 and 2.2.3) (continued)