



## ASEAN STANDARD FOR MANDARIN

### 1. DEFINITION OF PRODUCE

This standard applies to commercial varieties of mandarin grown from *Citrus reticulata* Blanco of the *Rutaceae* family, to be supplied fresh to the consumer, after preparation and packaging. Mandarin for industrial processing are excluded.

### 2. PROVISIONS CONCERNING QUALITY

#### 2.1 MINIMUM REQUIREMENTS

In all classes, subject to the special provisions for each class and the tolerances allowed, mandarin must be:

- whole;
- firm;
- sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- clean, practically free of any visible foreign matter;
- practically free from bruising;
- practically free of pests affecting the general appearance of the produce;
- practically free of damage caused by pests;
- practically free of damage caused by high and/or low temperature;
- free of abnormal external moisture, excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste<sup>1</sup>.

**2.1.1** The mandarin must have been carefully picked and have reached an appropriate degree of development and ripeness in accordance with criteria proper to the variety and/or commercial type, maturity period or time of picking, and to the area in which they are grown. The development and condition of the mandarins must be such as to enable them:

- to withstand transport and handling, and
- to arrive in satisfactory condition at the place of destination.

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<sup>1</sup> This provision allows for smell caused by conservation agents used in compliance with corresponding regulations

### **2.1.2 Maturity Requirements and Colouring**

Minimum total soluble solids content should not be less than 7.5% or minimum brix:acid ratio should not be less than 12:1.

Colouring must be typical of the variety and/or commercial type depending on the area where they are grown.

## **2.2 CLASSIFICATION**

Mandarin is classified in three classes defined below:

### **2.2.1 “Extra” Class**

Mandarin in this class must be of superior quality. They must be characteristic of the variety and/or commercial type. 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 and the keeping quality and presentation in the package.

### **2.2.2 Class I**

Mandarin in this class must be of good quality. They must be characteristic of the variety and/or commercial type. The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- slight defects in shape;
- slight defects in colouring;
- slight skin healed defect due to mechanical causes.

The total defect area of each fruit shall not exceed 10 percent of its total surface area. The defects must not, in any case affect the pulp of the fruit.

### **2.2.3 Class II**

This class includes mandarins which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 2.1 above. The following defects may be allowed, provided the mandarins retain their essential characteristics as regard the quality, the keeping quality and presentation:

- defects in shape;
- defects in colouring;
- healed skin defects due to mechanical causes.

The total defect area of each fruit shall not exceed 20 percent of its total surface area. The defects must not, in any case, affect the pulp of the fruit.



### 3. PROVISIONS CONCERNING SIZING

Size is determined by the maximum diameter of the equatorial section of the fruit, in accordance with the following table:

SIZE CODE	DIAMETER (mm)
1	>80
2	71-80
3	61-70
4	51-60
5	41-50

Mandarins with diameter below 41 mm are excluded.

### 4. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality and size shall be allowed in each package (or in each lot for produce presented in bulk) for produce not satisfying the requirements of the class indicated.

#### 4.1 QUALITY TOLERANCES

##### 4.1.1 “Extra” Class

Five percent by number or weight of mandarins not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.

##### 4.1.2 Class I

Ten percent by number or weight of mandarins not satisfying the requirements of the class, but meeting those of Class II, coming within the tolerances of that class.

##### 4.1.3 Class II

Fifteen percent by number or weight of mandarins satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

#### 4.2 SIZE TOLERANCES

For all classes, 10 percent by number or weight of mandarins corresponding to the size immediately above and/or below that indicated on the package.



## **5. PROVISIONS CONCERNING PRESENTATION**

### **5.1 UNIFORMITY**

The contents of each package (or lot for produce presented in bulk) must be uniform and contain only mandarin of the same origin, variety and/or commercial type, quality and size. The visible part of the contents of the package (or lot for produce in bulk) must be representative of the entire contents.

### **5.2 PACKAGING**

Mandarin must be packed in such a way as to protect the produce properly. The materials used inside the package must be new<sup>2</sup>, clean, and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed, provided the printing or labelling has been done with non-toxic ink or glue.

Mandarin shall be packed in each container in compliance with the Recommended International Code of Practice for Packaging and Transport of Tropical Fresh Fruit and Vegetables (CAC/RCP 44-1995).

#### **5.2.1 Description of Container**

The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the mandarins. Packages (or lot for produce presented in bulk) must be free of all foreign matter and smell.

## **6. MARKING OR LABELLING**

### **6.1 CONSUMER PACKAGES**

In addition to the requirements of the Codex General Standard for the Labelling of Pre-packaged Foods (CODEX STAN 1-1985, Rev.2-1999), the following specific provisions apply:

#### **6.1.1 Nature of the Produce**

If the produce is not visible from the outside, each package shall be labeled as to the name of the produce and may be labeled as to the name of the variety and/or commercial type.

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<sup>2</sup> For the purposes of this Standard, this includes recycled material of food-grade quality



## **6.2 NON-RETAIL CONTAINERS**

Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside, or in the documents accompanying the shipment. For produce transported in bulk these particulars must appear on a document accompanying the goods.

### **6.2.1 Identification**

Name and address of Exporter, Packer and/or Dispatcher.

### **6.2.2 Nature of Produce**

Name of produce if the contents are not visible from the outside. Name of variety and/or commercial type (optional).

### **6.2.3 Origin of Produce**

Country of origin and, optionally, district where grown or national, regional or local place name.

### **6.2.4 Commercial Identification**

- Class
- Size (size code or minimum and maximum diameter in millimeters)
- Net weight (optional)

## **7. CONTAMINANTS**

### **7.1 HEAVY METALS**

Mandarin shall comply with those maximum levels for heavy metals established by the Codex Alimentarius Commission and/or by authority for this commodity.

### **7.2 PESTICIDE RESIDUES**

Mandarin shall comply with those maximum residue limits established by Codex Alimentarius Commission and/or by authority for this commodity.

## **8. HYGIENE**

**8.1** It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice-General Principles of Food Hygiene (CAC/RCP 1-1969, Rev.3-1997), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.



**8.2** The produce should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

## **9. METHODS OF ANALYSIS AND SAMPLING**

Analytical and sampling methods to be used for ascertaining conformance to the requirements of this specification shall be in accordance with relevant text in Codex Methods of Analysis and Sampling, Volume 13



## **References**

Codex Standard for Pummelos. CODEX STAN 214-1999

Department of Agriculture-Ministry of Industry and Primary Resources, Brunei Darussalam. Proposed Draft Brunei Standard for Mandarin – BS/FFV 01/01/02-2006

Indonesian National Standard for Mandarin (SNI 01-3165-1992)

Draft Philippine National Standard for Mandarin.

