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MS 1994 (2007) (English): FRESH 'CAVENDISH'  
BANANA — SPECIFICATION



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# MALAYSIAN STANDARD

MS 1994:2007

## FRESH 'CAVENDISH' BANANA – SPECIFICATION

ICS: 67.080.10

Descriptors: cavendish, fresh banana, requirements, size classification, quality classification, specification

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Ministry of Science, Technology and Innovation  
Level 1 & 2, Block 2300, Century Square  
Jalan Usahawan  
63000 Cyberjaya  
Selangor Darul Ehsan  
MALAYSIA

Tel: 60 3 8318 0002  
Fax: 60 3 8319 3131  
<http://www.standardsmalaysia.gov.my>  
E-mail: [central@standardsmalaysia.gov.my](mailto:central@standardsmalaysia.gov.my)

OR **SIRIM Berhad**  
(Company No. 367474 - V)  
1, Persiaran Dato' Menteri  
Section 2, P. O. Box 7035  
40700 Shah Alam  
Selangor Darul Ehsan  
MALAYSIA

Tel: 60 3 5544 6000  
Fax: 60 3 5510 8095  
<http://www.sirim.my>  
E-mail: [msonline@sirim.my](mailto:msonline@sirim.my)

## CONTENTS

	Page
Committee representation .....	ii
Foreword .....	iii
1 Scope .....	1
2 Normative references .....	1
3 Definitions .....	1
4 Minimum requirements .....	3
5 Classification .....	3
6 Packaging .....	4
7 Sampling .....	4
8 Compliance with the specification .....	5
9 Legal requirements .....	5
Tables	
1 Size specification .....	3
2 Quality classification .....	4

## **Committee representation**

The Agricultural Industry Standards Committee (ISC A) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Cameron Highland Flower Growers Association  
Department of Agriculture  
Department of Standards Malaysia  
EPA Management Sdn Bhd  
Farmers Organization Authority  
Federal Agricultural Marketing Authority  
Federation of Livestock Farmers Association  
Johor Fish Breeders Association  
Malaysian Agricultural Research and Development Institute  
Malaysian Agrifood Corporation Berhad  
Malaysian Association of Standards Users  
Malaysian Fruit Exporters Association  
Malaysian Palm Oil Association  
Malaysian Rubber Board  
Ministry of Agriculture and Agro-based Industry  
Ministry of International Trade and Industry  
Ministry of Plantation Industries and Commodities  
Rubber Industry for Smallholders Development Authority  
Universiti Putra Malaysia

The Technical Committee on Fresh Fruits which developed this Malaysian Standard consists of representatives from the following organisations:

Department of Agriculture  
Federal Agricultural Marketing Authority  
Malaysian Agricultural Research and Development Institute  
Malaysian Fruit Exporters Association  
SIRIM Berhad (Secretariat)  
Universiti Kebangsaan Malaysia  
Universiti Putra Malaysia

## FOREWORD

This Malaysian Standard was developed by the Technical Committee on Fresh Fruits under the authority of the Agricultural Industry Standards Committee.

This standard is one of the Malaysian Standards on fresh fruits which was established to support the agriculture sectors. 'Cavendish' banana (*Musa* sp. cv. Cavendish) is popularly taken fresh and has been widely marketed. This Malaysian Standard prescribes the commercial quality requirements of 'Cavendish' banana to be supplied fresh to the consumer after preparation and packaging.

In the development of this Malaysian Standard, reference was made to the MS 1075:1987, *Export Specification for Fresh 'Mas' Bananas* and *Codex Standard for Bananas* (Codex Stan 205-1997) relating to the standardisation, grading and commercial quality control of banana.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

## FRESH 'CAVENDISH' BANANA – SPECIFICATION

### 1. Scope

This Malaysian Standard prescribes the commercial quality requirements of 'Cavendish' banana (*Musa* sp. cv. Cavendish) to be supplied fresh to the consumer after preparation and packaging. 'Cavendish' banana for industrial processing are excluded.

### 2. Normative references

The following normative references are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the normative references (including any amendments) applies.

Malaysian Food Act 1983 and Food Regulations 1985

MS 78, *Method of sampling for fresh fruits*

MS 1784: Part 7, *Good Agricultural Practice (GAP) - Part 7: Fruits and Vegetables*.

### 3. Definitions

For the purposes of this standard, the following definitions shall apply:

#### 3.1 Blemishes

Mark or marks on fruits such as rust, scarring and discolouration which affect its appearance but will not affect the eating quality.

#### 3.2 Blemished fruit

Fruit with more than 5% of its surface area covered with the blemishes.

#### 3.3 Bruises

Any mechanical injury that causes the peel of the individual banana to become soft and/or discoloured.

#### 3.4 Clean

Practically free of dirt, stains, other foreign materials and odours.

#### 3.5 Chilling injury

Physiological disorder which develops in fruit due to exposure to chilling temperatures below the optimum level for storage. It is characterised by the skin turning black or brown, failure of fruit to ripen satisfactorily and infection by fungal diseases. The optimum storage temperature for 'Cavendish' banana is 14°C.



## **MS 1994:2007**

### **3.6 Cluster**

A clear cut subdivision of a hand containing two or more fingers.

### **3.7 Damage**

Any defect or injury which materially affects the appearance, eating, or shipping qualities of the banana.

### **3.8 Diameter**

The greatest cross sectional distance of an individual finger measured at the right angle to the longitudinal axis.

### **3.9 Finger**

An individual banana fruit.

### **3.10 Growth cracks**

Breaks in the peel due to splitting or tearing.

### **3.11 Hand**

The full complement of fingers found attached to the one section of the peduncle.

### **3.12 Length**

The length is determined along the outside curve from the blossom end to the base of the pedicel where the edible pulp ends.

### **3.13 Mature**

Having reached the stage of development which will ensure a proper completion of the ripening process.

### **3.14 Off-size fruit**

Fruit failing to meet the minimum size requirements for the market.

## **4. Minimum requirements**

### **4.1 The fruit shall be:**

- a) sound, clean, smooth, well-formed, mature green and reasonably free from growth cracks, damage and bruises;
- b) practically free of pests affecting the general appearance of the produce;
- c) practically free of damage caused by pests;
- d) free of diseases under the condition that the stalk is intact;

- e) in fingers, hands or clusters and shall show a smooth cut from the stalk;
- f) free of damage caused by chilling injury;
- g) free of abnormal external moisture, excluding condensation following removal from cold storage and those packed under modified atmosphere conditions;
- h) free of any foreign smell and/ or taste; and
- j) of diameter not less than 2.7 cm.

4.2 The fruit shall comply with those maximum residue limits as specified in the *Malaysian Food Act 1983* and the *Malaysian Food Regulations 1985*.

## 5. Classification

### 5.1 Size classification

The fruits shall be classified according to the length as shown in Table 1.

Table 1. Size classification

Size	Extra large	Large	Medium	Small
Length (cm)	> 20.0	17.1 - 20.0	14.1 - 17.0	13.0 - 14.0

### 5.2 Quality classification

5.2.1 Each class shall be graded according to its general appearance, quality and condition.

5.2.2 There shall be three quality classifications for banana; Premium, Grade 1 and Grade 2.

5.2.3 The fruit shall be graded according to the quality classification as given in Table 2.

**Table 2. Quality classification**

Quality	Requirement	Tolerance
Premium	The fruit shall be of similar varietal characteristics, well formed and free from blemishes.	5% by number or weight of banana not satisfying the requirements of Premium Grade, but meeting those of Grade 1 or exceptionally, coming within the tolerances of that class.
Grade 1	The fruit shall be of similar varietal characteristics, fairly well formed and fairly free from blemishes.	10% by number or weight of banana not satisfying the requirements of Grade 1, but meeting those of Grade 2 or exceptionally, coming within the tolerances of that class.
Grade 2	The fruit shall be of similar varietal characteristics and reasonably free from blemishes. Fruits that are slightly misshapen or with slight bruising or with superficial defects are allowed.	10% by number or weight of banana 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.

## 6. Packaging

**6.1** Where packaging is necessary, the fruit shall be packed in clusters, hands or both.

**6.2** The fruit shall be packed in containers of suitable material such as corrugated paper or equivalent.

**6.3** Each individual pack shall be marked to give the following information:

- a) name of the produce;
- b) name and address of the producer (and/or exporter);
- c) country of origin;
- d) gross or nett weight in kg;
- e) size classification; and
- f) date of packing, if necessary.

NOTE. Quality classification may be marked on each individual pack.

## 7. Sampling

Sampling shall be carried out as prescribed in MS 78.

## **8. Compliance with the specification**

Upon testing, when each sample is found to conform to the requirements specified in this standard, the lot, batch or consignment from which the sample has been drawn shall be deemed to comply with this standard.

## **9. Legal requirements**

The produce shall comply with the requirements of the legislation currently in force in Malaysia.

## **Acknowledgements**

### **Members of Technical Committee on Fresh Fruits**

Mr Abdullah Hassan (Chairman)	Malaysian Agricultural Research and Development Institute
Ms Rafidah Abd Hamid (Secretary)	SIRIM Berhad
Mr Manogaran a/l Munisami/	Department of Agriculture
Mr Choo Seh Bah	
Ms Norma Mohd. Salleh/	Federal Agricultural Marketing Authority
Mr Samaluddin Sapardi	
Dr Mohd. Salleh Punan	Malaysian Agricultural Research and Development Institute
	Malaysian Fruit Exporters Association
Mr Ricky Yong Kew Keong/	
Mr S.H Lim	Universiti Kebangsaan Malaysia
Prof Dr Osman Hassan/	
Dr Mohd. Yusof Maskat	Universiti Putra Malaysia
Assoc Prof Dr Azizah Osman	