

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

WORLD  
HEALTH  
ORGANIZATION



JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

Agenda Item 4(c)

CX/FFV 03/9  
July 2003

## JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FRESH FRUITS AND VEGETABLES

*11<sup>th</sup> Session,  
Mexico City, Mexico, 8 - 12 September 2003*

### PROPOSED DRAFT CODEX STANDARD FOR APPLES (AT STEP 3)

Governments and interested international organizations in Observer status with Codex wishing to submit comments on the attached *proposed draft Codex Standard for Apples (AT STEP 3)* are invited to do so **no later than 22 August 2003** to C.P. Miguel Aguilar Romo, Director General de Normas, Av. Puente de Tecamachalco 6, segundo piso, Lomas de Tecamachalco Sección Fuentes, C.P. 53950 Naucalpan de Juárez, Estado de México CONM: (52) (5) 7 29 93 00, Ext. 4144, 4108 Directo: (52) (5) 72 99 480; Fax: (52) (5) 55 20 97 15; E-mail: [codexmex@economia.gob.mx](mailto:codexmex@economia.gob.mx) and/or [jorgez@economia.gob.mx](mailto:jorgez@economia.gob.mx), with a copy to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Foods Standards Programme, Via delle Terme di Caracalla, 00100 Rome, Italy (Fax No. 39.06.5705.4593 or E-Mail [codex@fao.org](mailto:codex@fao.org)).

## BACKGROUND

1. The 10<sup>th</sup> Session of the Codex Committee on Fresh Fruits and Vegetables (Mexico City, June 2002) agreed to return the proposed draft Codex Standard for Apples to Step 2 for redrafting, circulation, additional comments at Step 3 and consideration at its next Session. In taking this decision, the Committee decided to reconvene the Drafting Group under the chairmanship of the United States of America to revise the text on the basis of the written comments submitted at previous and present sessions of the Committee, and in consideration of recent development in the elaboration of the UN/ECE Standard for Apples.<sup>1</sup>
2. The *proposed draft Codex Standard for Apples* is annexed to this document. The text has been adjusted with standardized language applying across Codex standards for fresh fruits and vegetables. In view of the short time period between the submission of comments and the 11<sup>th</sup> Session of the Committee, comments received will be kept in original language.
3. Governments and interested international organizations are invited to comment **at Step 3** on the attached *proposed draft Codex Standard for Apples* as directed above.

<sup>1</sup> ALINORM 03/35, paras. 74-75.

**PROPOSED DRAFT CODEX STANDARD FOR APPLES**  
**(AT STEP 3)**

## **1. DEFINITION OF PRODUCE**

This Standard applies to fruits of the commercial varieties (cultivars) of apples grown from *Malus domestica* Borkh of the *Rosaceae* family, to be supplied fresh to the consumer, after preparation and packaging. Apples for industrial processing are excluded.<sup>1</sup>

## **2. PROVISIONS CONCERNING QUALITY**

### **2.1 MINIMUM REQUIREMENTS**

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

- whole;
- 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 of pests affecting the general appearance of the produce;
- practically free of damage caused by pests;
- practically free of damage caused by low and/or high temperature during storage;
- free of abnormal external moisture, excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste.
- free of internal watercore that exceeds the amount as defined in Annex II, after January 31<sup>st</sup> of the year following the year of production for apples produced in the northern hemisphere, or July 31<sup>st</sup> of the year of production for apples produced in the southern hemisphere, except for the Fuji variety.<sup>2</sup> Prior to these respective dates internal watercore shall not be considered as a factor of quality.

**2.1.1** The apples must have been carefully picked and have reached an appropriate degree of development and ripeness in accordance with criteria proper to the variety and to the area in which they are grown.<sup>2</sup>

The development and condition of the apples must be such as to enable them:

- to continue their ripening process and to reach the degree of ripeness required in relation to the varietal characteristics,
- to withstand commercial transport and handling, and
- to arrive in satisfactory condition at the place of destination.

### **2.2 CLASSIFICATION**

Apples are classified in three classes defined below

#### **2.2.1 “Extra” Class**

Apples in this class must be of superior quality. They must be must be characteristic of the variety in shape, size and colour.

They must be free of defects, with the exception of very slight superficial defects as defined in Annex II; provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

The stalk may be missing, provided the break is clean and the adjacent skin is not damaged.

---

<sup>1</sup> Governments, when indicating the acceptance of the Codex Standard for Apples, should notify the Commission which provisions of the Standard would be accepted for application at the point of import, and which provisions would be accepted for application at the point of export.

<sup>2</sup> Internal watercore shall not be considered as a quality factor in the Fuji variety at any time of the year.

### 2.2.2 Class I

Apples in this class must be of good quality. They must be characteristic of the variety.

Slight defects in shape, development, colouring, scarring, and damage from handling may be allowed provided these do not significantly affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

Slight skin or other defects must not exceed the limits as defined in Annex II.

The stalk may be missing, provided the break is clean and the adjacent skin is not damaged.

### 2.2.3 Class II

This class includes apples which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 2.1 above

Defects in shape, development, colouring, scarring, and damage from handling may be allowed provided the apples retain their essential characteristics as regards the quality, the keeping quality and presentation.

Skin or other defects must not exceed the limits as defined in Annex II.

The stalk may be missing, provided the break is clean and the adjacent skin is not damaged.

## 3. PROVISIONS CONCERNING SIZING

Size is determined by maximum diameter of the equatorial section or by weight.

However, when sizing by weight, the minimum weight must be ensured for all fruit, as appropriate, according to the minimum diameters for all categories determined below.

A minimum size by diameter shall be required for all categories according to the following table.<sup>3</sup>

	Extra	Class I	Class II
Large Fruit Varieties	70 mm	60 mm	57mm
Other Varieties	60 mm	55 mm	50 mm

NOTE: Need to insert weight (grams) equivalent.

For Red and Golden Delicious varieties, a combination of minimum diameter and/or weight may be used. When this designation is used, an individual apple will be considered to have met the minimum size requirement even if the apple is smaller than the minimum diameter, provided it is equal to or greater than the weight as follows: Red Delicious 2 1/8 in. or 65 grams, 2 1/4 in. or 75 grams, 2 3/8 in. or 84 grams, 2 1/2 in. or 100 grams, 2 5/8 in. or 115 grams, 2 3/4 in. or 139 grams; Golden Delicious 2 1/8 in. or 63 grams, 2 1/4 in. or 70 grams, 2 3/8 in. or 82 grams, 2 1/2 in. or 95 grams, 2 5/8 in. or 109 grams, 2 3/4 in. or 134 grams. (Inserted into table with Metric conversions).

SIZES		Red Delicious	Golden Delicious
Inches	mm	grams	grams
2 1/8	53.975	65	63
2 1/4	57.150	75	70
2 3/8	60.320	84	82
2 1/2	63.500	100	95
2 5/8	66.675	115	109
2 3/4	69.850	139	134

<sup>3</sup> However, for apples of the varieties Bramley's Seedling (Bramley, Triomphe de Kiel) and Horneburger, the difference in diameter may amount to 12.5 mm. The non-exhaustive list of large fruited varieties is provided in Annex III of the Standard.

To ensure there is uniformity of size within a package, the difference in diameter between fruit in the same package shall be limited to:

- 12.5 mm for all fruit classes packed in rows and layers,<sup>4</sup> or 25% of the average individual fruit weight in the package.
- 15 mm for fruit packed in bulk or in pre-packaging, or 30% of the average individual fruit weight in the package.

#### **4. PROVISIONS CONCERNING TOLERANCES**

Tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated; provided, that at least one defective and one off-size apple shall be permitted in any package.

For tolerances of 10% or more, individual packages shall contain not more than one and one-half times the tolerance specified.

For tolerances of less than 10%, individual packages shall contain not more than double the tolerance(s) specified.

Condition After Storage or Transit: Decay and other deterioration which may have developed in apples after they have been in storage or transit shall be considered as affecting condition and not the quality in any of the classes.

##### **4.1 QUALITY TOLERANCES**

###### **4.1.1 "Extra" Class**

Five percent by number or weight of apples not satisfying the requirements of the class nor the minimum requirements, but meeting those of Class I or, exceptionally, coming within the tolerances of that class. Included therein shall be allowed not more than one percent for apples affected by decay or internal breakdown.

###### **4.1.2 Class I**

Ten percent by number or weight of apples not satisfying the requirements of the class nor the minimum requirements, but meeting those of Class II or, exceptionally, coming within the tolerances of that class. Included therein shall be allowed not more than one percent for apples affected by decay or internal breakdown.

###### **4.1.3 Class II**

Ten percent by number or weight of apples 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.

Within this tolerance, a maximum of 5% by number or weight of fruit is allowed which may show the following defects:

- serious attacks of cork like blemishing (bitter pit) or water-core;
- slight damage resulting from unhealed broken skin /cracks;
- slight traces of or internal breakdown;
- presence of internal feeding pests;
- penetration of, or damage to the flesh caused by pests.

##### **4.2 SIZE TOLERANCES**

For all classes:

---

<sup>4</sup> However, for apples of the varieties Bramley's Seedling (Bramley, Triomphe de Kiel) and Horneburger, the difference in diameter may amount to 12.5 mm.

- for fruit subjected to the rules of uniformity, 10% by number or weight of apples corresponding to the size immediately above or below that indicated on the package, with, for fruit classified in the smallest grade allowed a maximum variation of 5mm below the minimum;
- for fruit not subject to the rules of uniformity, 10% by number or weight of fruit below the minimum size laid down, with a maximum variation of 5 mm below the minimum size.
- When size is designated by the numerical count for a container not more than 10% of the packages in the lot may fail to be fairly uniform

## **5. PROVISIONS CONCERNING PRESENTATION**

### **5.1 UNIFORMITY**

The contents of each package must be uniform and contain only apples of the same origin, variety, quality and size (if sized); provided that a package may contain more than one variety when the package is properly labelled to state the varieties. For “Extra” Class, colour should be uniform. The visible part of the contents of the package must be representative of the entire contents. If different varieties of apples are sold in the same package, uniformity of variety is not required.

### **5.2 PACKAGING**

Apples must be packed in such a way as to protect the produce properly. The materials used inside the package must be new<sup>5</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 labeling has been done with non-toxic ink or glue.

Apples 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 Containers**

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

### **5.3 PRESENTATION**

The apples may be presented under one of the following forms:

- a) In regular layers according to size, in open or closed containers, loose in consumer packages, shipping packages, or in bulk.
- b) Bulk presentation of apples is permitted in all classes.

## **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. 1 -1991), the following specific provisions should apply:<sup>6</sup>

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

If the produce is not visible from the outside, each package shall be labelled as to the name of the produce and may be labeled as to the name of the variety, class, and size or the number of pieces presented in rows and layers.

---

<sup>5</sup> For purposes of this Standard, this includes recycled material, or re-useable packaging of food-grade quality.

<sup>6</sup> Unit packs of produce pre-packed for direct sale to the consumer shall not be subject to these marking provisions, but shall conform to national requirements. However, the markings referred to shall be shown on the transport packaging containing such unit packs.

## **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.<sup>7</sup>

### **6.2.1 Identification**

Name and address of exporter, packer and/or dispatcher. Identification code (optional).

### **6.2.2 Nature of Produce**

Name of produce if the contents are not visible from the outside. Name of variety or varieties (where appropriate)

### **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, or number of pieces regardless of form of presentation.

### **6.2.5 Official Inspection/Control Mark (optional)**

## **7. CONTAMINANTS**

### **7.1 HEAVY METALS**

Apples shall comply with those maximum levels for heavy metals established by the Codex Alimentarius Commission for this commodity.

### **7.2 PESTICIDE RESIDUES**

Apples shall comply with those maximum residue limits established by the Codex Alimentarius Commission 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).

---

<sup>7</sup> Governments, when indicating their acceptance of this Standard, should notify the Commission as to which provisions of this Section apply.

## ANNEX II

### **Allowance of Defects:**

#### All Classes:

Damage by high or low temperatures means that there is internal discoloration or deterioration of the flesh of the apple.

#### Watercore

For varieties other than Fuji, internal water core is defined as water core existing at the core and extending to the vascular bundles, or when water core in three or more vascular bundles coalesces, or when water core exists in more than a slight degree in the area between the vascular bundles and the skin of the apple. When applying this standard, the degree of water core will be judged by cutting the apple cross-sectionally, midway between the calyx and stem end.

Internal water core shall not be considered as a quality factor in the Fuji variety at any time of the year.

#### **“Extra” Class**

Very slight superficial defects are permitted when not exceeding the following:

Limb rubs or similar blemishes when smooth and of a brown or lighter shade of color and not more than 0.5 cm<sup>2</sup>.

Russeting is permitted and not considered as a quality factor when the russet is smooth or lightly colored, located within the basin of the stem or calyx, and is not noticeable when the apple is placed with the russeted end down on a flat surface.

When occurring outside the stem or calyx basin –

Smooth net-like russeting shall not be more than 5% of the surface area;

Smooth solid russeting shall not be more than 0.5 cm<sup>2</sup>.

Slight bruising not more than 1.5 cm<sup>2</sup> area and with light discoloration.

#### **Class I**

Slight skin or other defects are permitted when not exceeding the following:

2 cm in length for defects of elongated shape;

- Blemishes that are light in color and do not sharply contrast with the appearance of the apple, not more than 2 cm<sup>2</sup> of the total surface area.
- Scab, (*Venturia inaequalis*), healed hail marks when the skin is not broken, dark limb rubs, or other surface blemishes of similar appearance, not more than 0.5 cm<sup>2</sup> cumulative area.
- Stem or calyx cracks, when well cured, not more than 0.5 cm in length.

Russeting is permitted and not considered as a quality factor when the russet is smooth or lightly colored, located within the basin of the stem or calyx, and is not noticeable when the apple is placed with the russeted end down on a flat surface.

If occurring outside the stem or calyx basin –

Smooth net-like russeting not more than 15% of the surface area, or

Smooth solid russeting not more than 5 percent of the surface area.

Slight bruising not exceeding 4 2 cm<sup>2</sup> cumulative area and 0.5 cm in depth

Discoloration is allowed.

The area of bruising is based on an apple 75 mm in diameter. Corresponding smaller or larger areas are allowed based on smaller or larger fruit.<sup>8</sup>

## **Class II**

Skin or other defects are permitted when not exceeding the following:

4 cm in length for defects of elongated shape;

- Defects that are dark in color or do not blend with the fruit surface, not more than 2.5 cm<sup>2</sup> total surface area.
- Scab, (*Venturia inaequalis*), healed hail marks when the skin is not broken, superficial pest damage, rough or very rough russeting, or other surface blemishes of similar appearance, not more than 1 cm<sup>2</sup> cumulative area.

Stem or calyx cracks, when well cured, not more than 1 cm in length.

Russeting is permitted and not considered as a quality factor when the russet is smooth or lightly colored, located within the basin of the stem or calyx, and is not noticeable when the apple is placed with the russeted end down on a flat surface.

If occurring outside the stem or calyx basin –

Smooth net-like russeting not more than 25% of the surface area, or

Smooth solid russeting not more than 10% of the surface area.

Bruising not exceeding 2.5 cm<sup>2</sup> cumulative area and 0.75 cm in depth. Discoloration is allowed.

The area of bruising is based on an apple 75 mm in diameter. Corresponding smaller or larger areas are allowed based on smaller or larger fruit.\*\* See footnote 3 above.

***Bruise area is 3.54% of surface if apple is spherical in shape.***

Note: Need to further develop

Size/weight – other varieties

Damage by pests, class I, II

---

<sup>8</sup> We need to insert a numerical percentage that will apply to all sizes; this would result in a consistent numerical amount. Bruise area is 2.26% of surface if apple is spherical in shape.