

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

WORLD  
HEALTH  
ORGANIZATION



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Agenda Item 4(a)

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

**14<sup>th</sup> Session,**  
**Mexico City, Mexico, 12 – 17 May 2008**

**PROPOSED DRAFT CODEX STANDARD FOR APPLES**

**(At Step 3)**

Codex Members and Observers wishing to submit comments on the above matter, including possible implications for their economic interests, should do so in conformity with the *Uniform Procedure for the Elaboration of Codex Standards and Related Texts* (Codex Alimentarius Commission Procedural Manual) before **15 April 2008**. Comments should be directed:

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## BACKGROUND

1. The 13<sup>th</sup> Session of the Codex Committee on Fresh Fruits and Vegetables (Mexico City, Mexico, September 2006) noted the report of the 1<sup>st</sup> meeting of the Working Group on Apples (Santiago, Chile, February 2006) and made general comments on a number of key provisions in the *proposed draft Codex Standard for Apples* e.g. minimum requirements, maturity requirements, sizing, uniformity, etc.

2. The Committee acknowledged the important progress made on the revision of the Standard and agreed to continue to discuss this matter at its next session. Meanwhile, it decided to reconvene the Working Group on Apples, led by the United States of America, to continue to work on the revision of the document, based on the written comments submitted to the session and consideration at the Plenary, with a view to producing a revised version that would be circulated for comments at Step 3 and consideration by the next session of the Committee. In taking this decision, the Committee noted that there might be a need for a physical meeting of the Working Group and if so, it would be held in accordance with the *Guidelines on Physical Working Groups* as set out in the *Procedural Manual of the Codex Alimentarius Commission*<sup>1</sup>.

<sup>1</sup> ALINORM 07/30/35 paras. 61 – 72.

3. The 2<sup>nd</sup> meeting of the Working Group on Apples was held in Washington, DC, United States of America from 4-6 September 2007 at the kind invitation of the Government of the United States of America. The meeting was attended by delegates from 12 Member countries, one Member Organization and observers from one international organization. The list of participants is attached as Appendix II. The Working Group revised the Standard based on the text provided to the last session of the Committee<sup>2</sup> as well as the oral and written comments presented to that session including written comments submitted by Codex Members/Observers to the Working Group.

## **MATTERS REFERRED BY THE WORKING GROUP ON APPLES TO THE CODEX COMMITTEE ON FRESH FRUITS AND VEGETABLES**

### **POINT OF APPLICATION OF THE STANDARD**

4. There was concern that Section 1 - Definition of Produce states: “*to be supplied fresh to the consumer, after preparation and packaging*”. However, increasingly countries are applying the Standard at the point of import and within the distribution channel without any increased tolerances for defects arising due to natural deterioration in quality of the produce. There was agreement that producers and exporters are disadvantaged when standards developed for application “*after preparation and packaging*” (shipping point) are applied further down the distribution channel.

5. It was recommended that the Committee consider this matter and decide whether to introduce adjustments on the allowances for defects to fresh fruit and vegetable standards for their application beyond the preparation and packaging stages resulting from the natural deterioration in quality during transport and storage. This issue is most important for international trade and fresh fruits and vegetables that undergo lengthy transportation voyages to their marketplaces.

### **CONDITION AFTER STORAGE OR TRANSIT**

6. Some delegations expressed that allowances for defects in the Standard are based on application of the Standard after preparation and packaging. However, a natural deterioration in quality occurs between packaging and final sale. The packer or shipper/exporter usually has no control over this occurrence, and in some cases it occurs irrespective of the best post harvest practices. Very often, this deterioration is manifested in defects that eventually end in decay of the fruit. In most cases this decay is not widespread.

7. The Working Group requested guidance on this matter from the Committee since this issue is not limited to apples, but to all fresh fruits and vegetables. In addition, the concept of tolerances for “*Condition after Storage or Transit*” was broadly supported. However, there was no agreement on specific values per each class of fresh fruits and vegetables.

## **OTHER ACTIVITIES HELD IN CONJUNCTION WITH THE MEETING OF THE WORKING GROUP ON APPLES**

### **APPLE INSPECTION WORKSHOP**

8. On Friday 7, September 2007 an Apple Inspection Workshop was held at the USDA/Agricultural Marketing Service, Fresh Products Branch, Training and Development Center in Fredericksburg, Virginia. The Workshop was held to bring a practical application to the Standard development and to promote understanding of the inspection process. Participants were pleased with the Workshop and noted that it should have been held prior to the Working Group meeting to facilitate the discussions.

## **OUTCOME OF THE DISCUSSION OF THE WORKING GROUP ON APPLES ON THE PROPOSED DRAFT CODEX STANDARD FOR APPLES**

9. The following outcomes are based on agreements from the majority of delegations present at Working Group meeting. Where delegates specifically requested it, opposing views are noted.

### **SECTION 2 – PROVISIONS CONCERNING QUALITY**

#### **Section 2.1 – Minimum Requirements**

10. The majority of the delegates agreed to the minimum requirements listed in the revised text. The delegation of India maintained its reservation to the inclusion of “*the stalk (stem) may be missing*” and wanted “*firm*” to be included as a minimum requirement. Most delegations indicated that there was no uniform international meaning of “*firm*” as it relates to apples, and the requirement of the produce being “*sound*” already encompasses the proposed meaning of “*firm*” within the quality context.

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<sup>2</sup> See footnote 12 (ALINORM 07/30/35).

11. There was agreement to delete “*have been carefully picked and*” from Section 2.1.1, since verification of this requirement is impossible. The delegation of India objected to this deletion.

## **Section 2.2 – Maturity Requirements**

12. The second paragraph was shortened as indicated in the Standard.

## **SECTION 2.3 - CLASSIFICATION**

### **Section 2.3.1 – Extra Class**

### **Section 2.3.2 – Class I**

### **Section 2.3.3 – Class II**

13. There was general agreement on the existing text of this section except for:

- In Extra Class, the delegation of Germany, supported by India, preferred the inclusion of the sentence “*the flesh must be perfectly sound*”. Most delegations felt that this requirement was already met by “sound” in the minimum requirements;
- The delegation of India wanted a requirement stating, “*for all classes the apple must conform to the coloring set out in Annex I*”. Most delegations indicated that mixing of apples of different colours is a standard industry practice. In addition, the requirement that apples in this class must be uniform in shape and color was unnecessary and burdensome to the industry.

## **Annex I – Colour Classification of Apples**

## **Annex II – Maximum Allowance for Defects**

14. It was agreed that the Chair would insert an introductory paragraph/sentence referencing Annexes I and II to indicate colour and defect allowances in all classes.

15. The Working Group agreed that Annex II was needed to facilitate uniform application of the Standard. The types of defects and their maximum limits per class were discussed and amended. The Working Group could not decide the correct placement of the table i.e. whether it should remain as an Annex or placed within the text of the Standard. However, the Working Group felt that reaching agreement on having the table and the values therein was a significant accomplishment.

16. Discussions on inclusion of russetting within the table in Annex II and identifying russetting apple varieties were inconclusive and postponed. Because russetting is a characteristic of some apple varieties while it is considered a defect in others, which in some cases it is difficult to distinguish, the listing of russetting varieties is inconsistent with the decision to abolish annexes of apple varieties by color and by size.

## **SECTION 3 – PROVISIONS CONCERNING SIZING**

17. The proposals arising from the 1<sup>st</sup> meeting of the Working Group<sup>3</sup> were discussed and amended for harmonization with the *UNECE Standard/Recommendation for Apples*. The UNECE minimum maturity requirement of 10.5°Brix for apples between 50 and 60 mm in diameter or less than 70 g in weight was adopted. However, the delegations of Germany and India indicated their preference for a higher minimum requirement of 12°Brix.

18. The preference for sizing codes was expressed by the delegations of the European Community, Italy and India. The delegation of India proposed a table of size codes and corresponding diameter and weight values.

## **SECTION 4 – PROVISIONS CONCERNING TOLERANCES**

### **Section 4.1 - Quality Tolerances**

19. Differences still exist between Codex Members on the interpretation of quality tolerances for the allowance of fruit from lower class into the two higher classes. This issue was not resolved and was referred to the forthcoming session of the Committee for further clarification within the context of the current discussion of the *proposed Layout on Codex Standards for Fresh Fruits and Vegetables*.

#### **Section 4.1.3 - Class II**

20. The objection to “*presence of internal feeding pests or damage to the flesh caused by pests*”, by some delegations, in particular Thailand and India, were lifted with the understanding that this issue is sufficiently addressed in more capable fora such as the *World Trade Organization Sanitary and Phytosanitary Agreement (WTO/SPS Agreement)*.

<sup>3</sup> See para. 3, footnote 2 of the present document.

### Proposal on Condition after Storage or Transit

21. This proposal was discussed for all three classes of apples (can be applied to other fresh fruits and vegetables) within the framework of application of the Standard at destination/import control stage. Industry participants indicated application of the best post harvest practices and application of modern technology do not rule out some deterioration during transport and storage.

22. The concept was accepted and counter proposals made for all three classes. Some delegations requested the Committee to indicate the defects and tolerances for this application. This issue was unresolved and forwarded to the forthcoming session of the Committee for clarification within the context of the current discussion of the *proposed Layout on Codex Standards for Fresh Fruits and Vegetables*.

## **SECTION 5 – PROVISIONS CONCERNING PRESENTATION**

### **Section 5.1 - Uniformity**

23. Attempts at resolving uniformity were not successful. The delegation of the United States withdrew Proposal 2 in favor of Proposal 3, while the Working Group agreed that Proposal 1 was not feasible<sup>3</sup>. The delegation of Australia expressed its reservation on this decision. The delegations of India and Italy introduced different amended versions of Proposal 3. A proposal for the adoption of the uniformity requirements from the *UNECE Standard/Recommendation for Apples* was not done due to lack of support from the delegation of India and most UNECE member countries present. Most delegates not supporting fixed sizing codes did not support the very prescriptive uniformity requirements in both new proposals.

## **SECTION 6 - MARKING OR LABELLING**

### **Section 6.2.4 - Commercial Identification**

24. The request to include size codes as part of the commercial identification was left until the completion of Sections III on sizing and 5.1 on uniformity.

### **REQUEST FOR COMMENTS**

25. The *proposed draft Codex Standard for Apples* as revised by the Working Group is attached to this document as Appendix I. Codex Members and Observers are invited to comment on the revised document as directed on the cover page. Particular regard should be paid to those matters which could not be definitely agreed upon/resolved by the Working Group. These provisions are highlighted in the text and explained in the relevant Background paragraphs. The proposed draft Standard along with the comments submitted will be considered by the Codex Committee on Fresh Fruits and Vegetables.

## PROPOSED DRAFT CODEX STANDARD FOR APPLES

### (AT STEP 3)

#### 1. DEFINITION OF PRODUCE

This Standard applies to fruits of 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.

#### 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, the stalk (stem) may be missing, provided the break is clean and the adjacent skin is not damaged;
- 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 and damage caused by them affecting the general appearance of the produce;
- free of abnormal external moisture, excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste;
- free of damage caused by low and/or high temperatures;
- practically free of signs of dehydration.

##### 2.1.1 The apples must have colour that is characteristic of the variety and the area in which they are grown.

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

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

##### 2.2 MATURITY REQUIREMENTS

Apples must be at a stage of development that enables them to continue the ripening process and to reach a stage of ripeness required in relation to the varietal characteristics.

In order to verify the minimum maturity requirements some parameters such as: morphological aspects, firmness and refractometric index can be considered.

##### 2.3 CLASSIFICATION

In accordance with the colouring requirements outlined in Annex I- Colour Classification of Apples, and with the defects allowed in Annex II- Maximum Allowance for Defects, apples are classified in three classes defined below<sup>1</sup>:

##### 2.3.1 "Extra" Class

Apples in this class must be of superior quality. The flesh must be sound. They must be characteristic of the variety. 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<sup>2</sup>.

##### 2.3.2 Class I

Apples in this class must be of good quality. The flesh must be sound. They must be characteristic of the variety. 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<sup>2</sup>:

- a slight defect in shape and development;
- a slight defect in colouring (see Annex I);
- slight skin or other defects (see Annex II).

<sup>1</sup> [These classifications do not preclude mixed class consignment.]

<sup>2</sup> Skin and other defects must not exceed the limits as defined in Annexes I and II.

### 2.3.3 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. The following defects, however, may be allowed, provided the apples retain their essential characteristics as regards the quality, the keeping quality and presentation<sup>2</sup>:

- defects in shape and development;
- defects in colouring (see Annex I);
- skin or other defects.(see Annex II).

## 3. PROVISIONS CONCERNING SIZING

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

### Proposal A

For all varieties and all classes the minimum size is 60 mm if measured by diameter or 90 g if measured by weight. Fruit of smaller sizes may be accepted provided the Brix level of the produce meets or exceeds 10.5°Brix and the size is not smaller than 50 mm or 70 g.

### Proposal B

Size Code	Diameter (in mm.)	Weight (in g)
A or 1	> 80	> 221
B or 2	71 - 80	191 - 220
C or 3	66 - 70	151 - 190
D or 4	61 - 65	121 - 150
E or 5	< 61	< 120

## 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.

### 4.1 QUALITY TOLERANCES

#### 4.1.1 "Extra" Class

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

Included therein shall be allowed not more than [0% none] [0.5 / 1.0%] for apples affected by decay or internal breakdown at destination.

#### 4.1.2 Class I

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

Included therein shall be allowed not more than [1 / 2%] for apples affected by decay or internal breakdown at destination.

#### 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.

Included therein shall be allowed not more than [2 / 3%] by number or weight is allowed for apples affected by decay or internal breakdown at destination

Included therein shall be allowed, a maximum of 2% by number or weight of fruit which may show the following defects:

- cork like blemishing (bitter pit);
- slight damage or unhealed broken skin /cracks;
- presence of internal feeding insects/pests or damage to the flesh caused by pests.

#### 4.2 SIZE TOLERANCES

For all classes of fruit subjected to rules of uniformity, 10% by number or weight of apples not meeting the size indicated on the package.

This tolerance may not be extended to include produce with a size below 50 mm or 70 g if the refractometric index is below 10.5°Brix

### 5. PROVISIONS CONCERNING PRESENTATION

#### 5.1 UNIFORMITY

The contents of each package must be uniform and contain only apples of the same origin, quality, size and variety. For “Extra” Class, colour should be uniform as possible. Sales packages (of a net weight not exceeding 5 kg) may contain mixtures of varieties and sizes provided they are uniform in quality, and for each variety concerned, its origin. The visible part of the contents of the package must be representative of the entire contents except for mixed sizes and varieties.

#### Proposal A

The difference in diameter or weight between fruit in the same package shall be limited to:

- under a weight of 90 g : 15 g or  
under a diameter of 60 mm : 5 mm
- from a weight of 91 -135 g : 20 g or  
between 60 -70 mm : 5 mm in diameter
- from a weight of 136- 200 g : 30 g or  
between 70 -78 mm : 10 mm in diameter
- from a weight of 201 – 300 g : 40 g or  
between 78 – 85 mm : 10 mm in diameter
- over a weight of 300 g : 50 g or  
over a diameter of 85 mm : 15 mm]

#### Proposal B

The difference in diameter or weight between fruit in the same package shall be limited to:

- < 60 mm (70 – 90 g): 5 mm or 15 g
- 61 – 70 mm (91 – 135 g): 5 mm or 20 g
- 71 – 78 mm (136 – 200 g): 10 mm or 30 g
- 79 – 85 mm (201 -300 g): 10 mm or 40 g
- 86 mm (301 g) and above: 10 mm or 50 g

#### 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>3</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.

Apples shall be packed in each container in compliance with the Recommended International Code of Practice for Packaging and Transport of Fresh Fruits 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.

<sup>3</sup> For the purposes of this Standard, this includes recycled material of food-grade quality.

### 5.3 PRESENTATION

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

[to be developed]

## 6. MARKING OR LABELLING

### 6.1 CONSUMER PACKAGES

In addition to the requirements of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985), the following specific provisions apply:

#### 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 labelled as to name of the variety, class and size/weight or the number of pieces presented in rows and layers.

### 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. Identification code (optional)<sup>4</sup>.

#### 6.2.2 Nature of Produce

Name of the produce if the contents are not visible from the outside. Name of the 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 (if sized)/size code.

#### 6.2.5 Official Inspection Mark (optional)

## 7. CONTAMINANTS

### 7.1 PESTICIDE RESIDUES

Apples shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

### 7.2 OTHER CONTAMINANTS

Apples shall comply with those maximum levels for contaminants 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), Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003), 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).

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<sup>4</sup> The national legislation of a number of countries requires the explicit declaration of the name and address. However, in the case where a code mark is used, the reference “packer and/or dispatcher (or equivalent abbreviations)” has to be indicated in close connection with the code mark.



**ANNEX I****COLOUR CLASSIFICATION OF APPLES**

This Annex describes four broadly accepted colour classification of apples. Included are percentages/fractions of surface colour requirement for red apple varieties.

<b>GROUP A - VARIETIES WITH RED COLOURING</b>	
<b>“Extra” Class</b>	At least $\frac{2}{3}$ of the surface of the fruit is red in colour
<b>Class I</b>	At least $\frac{1}{2}$ of the surface of the fruit is red in colour
<b>Class II</b>	At least $\frac{1}{4}$ of the surface of the fruit is red in colour

<b>GROUP B - VARIETIES WITH SEMI-RED OR MIXED COLOURING</b>	
<b>“Extra” Class</b>	At least $\frac{1}{2}$ of the surface of the fruit has semi-red colouring
<b>Class I</b>	At least $\frac{1}{3}$ of the surface of the fruit has semi-red colouring
<b>Class II</b>	At least $\frac{1}{10}$ of the surface of the fruit has semi-red colouring

<b>GROUP C - VARIETIES WITH STRIPES AND SLIGHT RED COLOURING</b>	
<b>“Extra” Class</b>	Blush cheek
<b>Class I</b>	Tinge of colour
<b>Class II</b>	Tinge of colour

<b>GROUP D - GREEN AND YELLOW VARIETIES</b>	
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**ANNEX II**

**MAXIMUM ALLOWANCE FOR DEFECTS**

Defects Allowed		“Extra” Class	Class I	Class II
Russetting outside Calyx/stem cavity	• smooth net-like	5% of surface area	15% of surface area	25% of surface area
	• smooth solid	1%	5% of surface area	20% of surface area
accumulation for both types of russetting should not exceed the following		5	20	40
Accumulated Blemishes & Bruising:				
- with slight discoloration;		.75 cm <sup>2</sup>	2.0 cm <sup>2</sup>	3 cm <sup>2</sup> <sup>5</sup>
- which Scabs ( <i>Venturia inaequalis</i> );		-----	0.25 cm <sup>2</sup>	1 cm <sup>2</sup>
- and/or of which healed hail marks /or other similar indentations.			0.5 cm <sup>2</sup>	1 cm <sup>2</sup>
Stem or Calyx cracks (healed or well cured)		---	0.5 cm	1 cm
Maximum length of elongated shaped defects		---	2 cm	4 cm

Russetting can be simply described as a “brownish roughened area or streaks on the skin of the apple”. In some apple varieties russetting is a characteristic of the variety and for others a quality defect. Allowances for russetting will be applied to apple varieties that russetting is not a characteristic of.

<sup>5</sup> Bruising with discoloration and dark blemishes not blending with skin color are accepted in this Class.

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**WORKING GROUP ON APPLES**  
**2<sup>nd</sup> Meeting**  
**Washington, DC, USA, 4-7 September 2007**

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