JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FRESH FRUITS AND VEGETABLES
13th Session,
Mexico City, Mexico, 25 - 29 September 2006
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 31 July 2006. Comments should be directed:

to: Chairperson of the Committee,
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BACKGROUND

1. The 12th Session of the Committee made some general and specific comments on the proposed draft Codex Standard for Apples. However, in view of time constraints and the extensive comments received, the Committee suspended the consideration of the document and consequently, it returned the proposed draft Standard to Step 2 while reconvening the working group led by the United States of America to revise the text on the basis of the discussion held and the comments submitted, as well as in light of the developments in the UN/ECE Standard for Apples, for comments and consideration at its next Session.

2. The Committee noted that a physical meeting of the working group might assist in the resolution of the matters surrounding quality requirements for apples in particular those related to alignment with the standardized language usually applying across Codex standards for fresh fruits and vegetables as well as the corresponding UN/ECE Standard; Watercore; Maturity Requirements; Sizing Requirements; Annexes on Colouring, Russetting, Large/Small Varieties; and introductory paragraphs to the Annexes which constituted the terms of reference of the working group1.

1 ALINORM 05/28/35, paras. 69-73.
The Codex Secretariat has aligned some provisions e.g. contaminants (Section 7), presence and damage caused by pests (Section 2.1), etc. in accordance with the decision of the Committee to apply this language to Codex standards for fresh fruits and vegetables. The language for the footnote in Section 6.2.1 has been deleted by the working and re-inserted by the Codex Secretariat as crossed-out text to draw the attention of the Committee that this provision applies to all Codex standards for fresh fruits and vegetables and that justification should be provided whether this exception applies only to apples or it should apply across Codex standards for fresh fruits and vegetables.

**PROPOSAL OF THE WORKING GROUP ON APPLES**

The joint meeting of the working groups on table grapes and apples was held in Santiago, Chile, from 20 - 23 February 2006 at the kind invitation of the Government of Chile. The meeting on apples was chaired by Mr Dorian LaFond, International Standards Coordinator, Agriculture Marketing Service, Fruits and Vegetables Programmes, United States Department of Agriculture. The meeting was attended by delegates from 10 Member countries, one Member Organization and one Observer from an international organization. The list of participants is attached as Annex II.

The working group based its discussions on the proposal contained in the working document presented at the last session of the Committee (CX/FFV 05/12/8) and the comments submitted on that document as well as relevant UN/ECE documents including the UN/ECE Standard/Recommendation for Apples.

**Matters identified in the Terms of Reference**

In regard to the issues identified in the Terms of Reference (see para. 2), the following was raised and/or agreed upon by the working group:

7. **Alignment with the standardized language usually applying across Codex standards for fresh fruits and vegetables taking into account the UN/ECE Standard for Apples**: During the deliberations of the working group both alignments were done. Some changes were agreed to and new issues along with their impact on the proposed Codex Layout for Codex Standards for Fresh Fruits and Vegetables, including the minimum requirement on the presence of pest, sizing requirements and table of tolerances were raised.

8. In this regard, proposals for changes to the proposed Codex Layout and the text language of Sections 6, 7 and 8 were made. The working group encouraged Codex Members and Observers to submit their proposal for changes to the Codex Secretariat on the proposed Codex Layout in a timely manner to facilitate discussion at the next Session of the Committee.

9. **Watercore**: Most delegations agreed that specific mention of watercore could be deleted as this requirement itself was not a defect, and was in fact required as a customer preference in some markets. The defect that needed to be addressed was internal breakdown and this was adequately covered by the provision for “sound”. The delegation of Thailand advised that they needed more time to consider the implications for removing watercore.

10. **Maturity Requirements**: The European apple industry represented by the International Federation of Agricultural Producers (IFAP) informed of its current research on maturity parameters/indicators in apples. The IFAP indicated its willingness to present/share its findings with the Committee. Some members of the working group were concerned that the IFAP research would only reflect European apple varieties and growing conditions unless other countries contributed to this effort. The working group encouraged Codex Members and Observers to forward relevant national information on apple maturity parameters/indicators to IFAP.

11. **Sizing Requirements**: Most delegates agreed on the necessity to include a criterion for size that allowed trade in small apples, as sufficient ripeness was the important matter. Some delegations did not believe there was a strong link between size and maturity, since size could be manipulated by production practices. Other delegations indicated a minimum Brix measurement for small apples could partly address the concerns around immature fruit.

12. The working group agreed to delete the sizing table in Section 3 and replace with a minimum size for all classes and varieties of 60 mm or 90 gr. Some delegates agreed that for smaller apples of 50 mm or 70 gr a minimum measurement of 11°Brix as proposed by the delegation of the United Kingdom could be considered appropriate. The delegation of the USA did not support any minimum sizing requirement for all apples. The working group agreed that more data was needed on maturity parameters in apples.

2 ALINORM 05/28/35, paras.24, 56.
3 IFAP address can be found in the List of Participants attached as Annex II.
13. **Annexes on Colouring, Russeting, Large/Small Varieties:** The following matters were raised and/or agreed upon by the working group. Two of the Annexes (I and II) were referred to the Committee for further discussion and one was deleted (Annex III).

14. **Annex I - Colour Classification for Apples:** The majority of delegations in attendance, except the United States of America, preferred the deletion of this Annex. The delegation of the USA recommended a shortened Annex of the major apple varieties traded internationally.

15. There was uncertainty surrounding how to continue the colour classification of apples in each class, if this Annex was deleted. Consideration was given to whether the general requirements for colour in each class were sufficient. The working group could not resolve this issue and decided to retain the colour groups in Annex I for reference purposes until a resolution to the colour classification without a variety list. The working group encouraged Codex Members and Observers to submit proposals to the Committee on resolving colour classification without a colour variety list.

16. **Annex II - Allowance for Defects:** The delegation of the United States of America proposed this Annex to facilitate uniform international interpretation of the Standard by having common definitions for the subjective terms for the defects allowed and their tolerances. The delegation of the USA was concerned that without uniform international definition and interpretation, the subjective terms in the Standard could become trade barriers.

17. With regard to tolerances for “Extra” Class, some delegations were concerned that without such tolerances/allowances for defects it was almost impossible to meet the requirements of the “Extra” Class and suggested the deletion of this class. Other delegations disagreed with the proposed allowances, and were in favour of retaining the “Extra” Class with the allowances more aligned to the UN/ECE Standard/Recommendation for Apples.

18. The working group, realizing the effects of both the USA proposal and the tolerances for “Extra” Class had on the proposed Codex Layout and other Codex standards for fresh fruits and vegetables, referred them to the Committee and its working group on the Guidelines for the Quality Control of Fresh Fruits and Vegetables. It was recommended that if this issue was not within the terms of reference for the said working group, the Committee revised the terms of reference of the said working group to accommodate/facilitate this issue. Annex II was therefore retained.

19. **Annex III - Large Fruited Varieties:** Due to the introduction of a new sizing requirement reflecting international trading practices with no specific requirement tied to large or other fruit varieties; Annex III became irrelevant and was deleted.

20. **Introductory paragraphs to the Annexes:** The introductory paragraphs to the Annexes were done but not discussed.

**Matters other than those identified in the Terms of Reference**

21. Besides the issues identified in the Terms of Reference, the working group also revised other sections of the Standard and raised and/or agreed upon the following:

22. **Section 2.1 - Minimum Requirements:** The working group agreed to add provisions for the stalk (stem). The delegations of India and Thailand expressed their reservation on this addition.

23. The delegation of India recommended an alternative text: “The stalk must be intact and trimmed up to the shoulder level”.

24. The delegation of Thailand recommended the following text to be applied only to apples in “Extra” Class: “The stalk (stem), preferably intact, however may be missing, provided the break is clean and the adjacent skin is not damaged.”.

25. In addition, the delegation of Thailand expressed its reservation to the deletion of “free of watercore”.

26. **Section 2.2.1 - “Extra” Class:** The delegation of Germany, supported by India, agreed with the inclusion of provisions for the soundness of the flesh in this class. Most delegations felt that this requirement was already met by the term “sound” in Section 2.1. In addition, the delegation of India required that “for all classes the apple must conform to the colouring set out in Annex I”. Most delegations indicated that mixing of apples of different colours was a standard industry practice and that the requirement for uniformity in shape and colour in this class was unnecessary and burdensome to the industry.
27. **Section 3 - Provisions concerning Sizing:** The delegation of the United Kingdom put forward a proposal for a single minimum size by diameter and weight applying to all varieties and quality classes. For fruit of sizes below the minimum required there should be a minimum correlation between the maturity of the fruit by indicating a minimum Brix° level vis-à-vis size by diameter or weight. This proposal was supported by a number of delegations. Other delegations tentatively supported this proposal but indicated that they need to consult with their industry prior to their final agreement.

28. The delegation of the USA did not support the inclusion of a minimum size requirement for apples and the inclusion of any “Brix° requirement” as part of the sizing provisions for small/smaller apples in the Standard. The Delegation pointed to growing market demand for small apples and the promotion of small apples in some markets in an effort to increase fruit consumption. It indicated its position on the exclusion of “Brix° requirement” as part of the sizing provisions for small/smaller apples was due to:
   
   (a) Section 2.1.2 - Maturity Requirements of the proposed text stated that any refractometric index taken should be used for information only and not as a requirement.
   
   (b) Studies on maturity requirements in apples were still ongoing; therefore it was premature to indicate any such requirement in the Standard.

29. The delegation of Thailand proposed that the reference to Brix° as a maturity indicator be placed in the section on Minimum or Maturity Requirements.

30. The working group encouraged Codex Members and Observers to evaluate different sizing proposals using international trading practices and scientific evidence directly linking apple size to maturity and other quality parameters to assist in resolving this issue.

31. **Section 4 - Provisions concerning Tolerances:** The delegation of the USA proposed that Annex II- Table of Allowances - be inserted in this section replacing most of the subjective text language and thereby simplifying the Standard. It was agreed to refer this issue to the Committee for further discussion for it would significantly change to the proposed Codex Layout. It was indicated that there must be agreement on the defects and their individual tolerances listed in the Table. This matter was referred to the Committee and, if appropriate, to its working group on the Guidelines for the Quality Control for Fresh Fruits and Vegetables.

32. **Section 4.1 - Quality Tolerances:** The working group noted differences existing between its members on the interpretation of allowance for fruit of a lower class into the two higher classes. This issue was therefore referred to the Committee for further clarification.

33. **Section 4.1.2 - Class I:** The working group noted a proposal on allowances for apples affected by decay or internal breakdown. The delegation of Thailand indicated its reservation for the inclusion of an allowance for these defects. Other delegations expressed that an allowance for decay or internal breakdown was necessary due to the perishable nature of apples. It was felt that this issue would form part of the discussion on the Table of Allowances.

34. **Section 4.1.3 - Class II:** The working group noted a proposal for presence of internal feeding pests in this class. Some delegations objected to the inclusion of this provision. Most other delegations supported its inclusion as long as they were not quarantined. The delegation of the USA expressed its reservation on the exclusion of presence of internal feeding pests and indicated that presence of non-quarantined pest were allowed in international trade. The delegation of India preferred that any indication of pest be deleted from the Standard. This matter was referred to the Committee for clarification in relation to non-quarantined pest for all Codex standards for fresh fruits and vegetables.

35. **Section 5.1 - Provisions concerning Uniformity:** The working group could not addressed uniformity due to the lack of time. The delegations of Germany and the United Kingdom submitted new uniformity proposals which were added to the existing provisions. The working group encouraged Codex Members and Observers to evaluate the 3 proposals on uniformity in order to resolve this matter at the next session of the Committee.

36. **Section 5.3 - Presentation:** The working group noted conflicting views on the mandatory requirement that “Extra” Class be packed only in rows/layers. Some delegations objected to this requirement stating that it did not reflect international trading practices using new packaging and presentation, in addition to being trade restrictive.

37. **Section 6.2.4 - Commercial Identification (Marking or Labelling):** The delegation of India requested the inclusion of a size code as part of this Section, which was objected by many delegations because there were no sizing codes indicated in Section 3 of the Standard. This Section was referred to the Committee for further discussion and resolution.
REQUEST FOR COMMENTS

38. The proposed draft Codex Standard for Apples as revised by the working group is appended to this document as Annex 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 been carefully picked and have colour that is characteristic of the variety and to 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 several parameters such as: morphological aspects, taste, firmness, and refractometric index, can be considered. If refractometric indices of the flesh are used, the Brix degree must be greater than or equal to [ ] should be used for information only and not as a requirement.

2.3 CLASSIFICATION

Apples are classified in three classes defined below¹:

2.3.1 “Extra” Class

Apples in this class must be of superior quality. The flesh must be perfectly sound. They must be characteristic of the variety and/or commercial type in shape and colour. 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 package².

2.3.2 Class I

Apples in this class must be of good quality. They must be characteristic of the variety and/or commercial type in shape and colour. 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 package²:

- a slight defect in shape, development and colouring;
- slight skin or other defects.

¹ These classifications do not preclude mixed class consignment.
² Skin and other defects must not exceed the limits as defined in Annex 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:\footnote{Defects in shape, development and colouring; skin or other defects.}

3. PROVISIONS CONCERNING SIZING

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

For all varieties and all classes the minimum size is 60 mm if measured by diameter or 90 gr if measured by weight. Fruit of smaller sizes may be accepted provided the Brix level of the produce meets or exceeds $11^\circ$Brix and the size is not smaller than 50 mm or 70 gr.

4. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality and size shall be allowed in each package 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.

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 2% 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 the 10% tolerance, not more than 3% by number or weight is allowed for apples affected by decay or internal breakdown.

Within the 10% tolerance, a maximum of 2% by number or weight of fruit is allowed which may show the following defects:

\begin{itemize}
  \item cork like blemishing (bitter pit);
  \item slight damage or unhealed broken skin /cracks;
  \item presence of internal feeding pests or damage to the flesh caused by pests.
\end{itemize}

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. When size is designated by the numerical count per container not more than 10% of the packages in the lot may fail to be fairly uniform\footnote{Apples presented in layers the tolerances is for the master container and not individual layers.}.

5. PROVISIONS CONCERNING PRESENTATION

5.1 UNIFORMITY

Proposal (1)

The contents of each package must be uniform and contain only apples of the same origin, quality, size (if sized) and may be of mixed varieties. For “Extra” Class, colour should be uniform as possible. If different varieties, classes and/or sizes of apples are sold in the same package, uniformity of variety and/or size is not required. The visible part of the contents of the package must be representative of the entire contents.
Proposal (2)
To ensure there is uniformity of size within a package, the difference in diameter/weight between fruit in the same package shall be limited to:
- 12.5 mm for all fruit classes packed in rows and layers or 25% of the average individual fruit weight in the package.
- 15.0 mm for fruit packed in bulk or in pre-packaging, or 30% of the average individual fruit weight in the package.

Proposal (3)
The contents of each package must be uniform and contain only apples of the same origin, quality, size, and degree of ripeness. For “Extra” Class, colour should be uniform as possible. Sales packages (of a net weight not exceeding 5 kg) may contain mixtures of varieties, provided they are uniform in quality, and for each variety concerned, in origin. The visible part of the contents of the package must be representative of the entire contents except for mixed sizes and varieties.

The difference in diameter or weight between fruit in the same package shall be limited to:
- under a diameter of 60 mm (90 gr): 5 mm / 20 gr.
- from a diameter of 60 mm (90 gr) to 90 mm (290 gr): 10 mm / 40 gr.
- over a diameter of 90 mm (290 gr): 15 mm / 75 gr.

The difference in blush collared surface between the apples in a package must not exceed:
- 10% for “Extra” Class.
- 15% for Class I.

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, 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.


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
[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, Rev. 1-1991), 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.

4 For the purposes of this Standard, this includes recycled material of food-grade quality.
6.2.1 Identification
Name and address of exporter, packer and/or dispatcher. Identification code (optional)

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, Rev. 4-2003), 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

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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.

**GROUP A - VARIETIES WITH RED COLOURING**

<table>
<thead>
<tr>
<th>Class</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Extra”Class</td>
<td>At least 2/3 of the surface of the fruit is red in colour</td>
</tr>
<tr>
<td>Class I</td>
<td>At least ½ of the surface of the fruit is red in colour</td>
</tr>
<tr>
<td>Class II</td>
<td>At least ¼ of the surface of the fruit is red in colour</td>
</tr>
</tbody>
</table>

**GROUP B - VARIETIES WITH SEMI-RED OR MIXED COLOURING**

<table>
<thead>
<tr>
<th>Class</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Extra” Class</td>
<td>At least ½ of the surface of the fruit has semi-red colouring</td>
</tr>
<tr>
<td>Class I</td>
<td>At least 1/3 of the surface of the fruit has semi-red colouring</td>
</tr>
<tr>
<td>Class II</td>
<td>At least 1/10 of the surface of the fruit has semi-red colouring</td>
</tr>
</tbody>
</table>

**GROUP C - VARIETIES WITH STRIPES AND SLIGHT RED COLOURING**

<table>
<thead>
<tr>
<th>Class</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Extra”Class</td>
<td>Blush cheek</td>
</tr>
<tr>
<td>Class I</td>
<td>Tinge of colour</td>
</tr>
<tr>
<td>Class II</td>
<td>Tinge of colour</td>
</tr>
</tbody>
</table>

**GROUP D - GREEN AND YELLOW VARIETIES**
ANNEX II

This Annex sets the physical limits of the defects listed in the standard thereby Establishing uniform application of the standard, thereby reducing the subjective/normative nature of the interpretation of the defects. Listed are the some of the most common apple defects. It also attempts to resolve the issue of russetting.

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.

MAXIMUM ALLOWANCE FOR DEFECTS

<table>
<thead>
<tr>
<th>DEFECTS ALLOWED</th>
<th>“EXTRA” CLASS</th>
<th>CLASS I</th>
<th>CLASS II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limb Rub (brown or light brown in colour)</td>
<td>0.5 cm²</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Russetting outside Calyx/stem cavity</td>
<td>• smooth net-like</td>
<td>5% of surface area</td>
<td>15% of surface area</td>
</tr>
<tr>
<td></td>
<td>• smooth solid</td>
<td>0.5 cm²</td>
<td>5% of surface area</td>
</tr>
<tr>
<td>Slight bruising, with slight discoloration(*)</td>
<td>1.5 cm²</td>
<td>2 cm²</td>
<td>2.5 cm²</td>
</tr>
<tr>
<td>Light Blemishes</td>
<td>5 cm²</td>
<td>2 cm²</td>
<td>2.5 cm²</td>
</tr>
<tr>
<td>Scabs (<em>Venturia inaequalis</em>), dark blemishes, healed hail marks, and similar blemishes</td>
<td>---</td>
<td>0.5 cm²</td>
<td>1 cm²</td>
</tr>
<tr>
<td>Stem Calyx cracks (healed or well cured)</td>
<td>---</td>
<td>0.5 cm</td>
<td>1 cm</td>
</tr>
<tr>
<td>Bruising with discoloration(†)</td>
<td>---</td>
<td>----</td>
<td>2.5 cm²</td>
</tr>
<tr>
<td>Dark blemishes not blending with skin colour</td>
<td>----</td>
<td>----</td>
<td>2.5 cm²</td>
</tr>
<tr>
<td>Maximum length of elongated shaped defects</td>
<td>----</td>
<td>2 cm</td>
<td>4 cm</td>
</tr>
</tbody>
</table>

*Bruises shall be visible or detectable without removal of the peel

Any combination of defects on an apple, excluding russeting, shall not exceed that of the largest single defect allowed in the class.

**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.
ANNEX II

LIST OF PARTICIPANTS

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