International Workshop on Commercial Quality Standards for Fresh Fruit and Vegetables
(Dubrovnik 2011)
UNECE STANDARD FFV-36. TOMATOES

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Tomatoes
Production and Trade
International Workshop
(Dubrovnik 2011)
UNECE Standard FFV-36. TOMATOES

Word Fruit Production 2008 Total 570 Million Tons

- China 19%
- India 11%
- Brazil 7%
- United States 5%
- Mexico 3%
- Indonesia 3%
- Spain 3%
- Philippines 2%
- Iran 2%
- Turkey 2%
- Uganda 2%
- Egypt 2%
- Nigeria 2%
- Others 33%
European Tomato Production 2009

Total: 23,195,819 Tonnes

Source: FAOSTAT

Croatia: 37,419
European Tomato Production 2005 - 2009
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Production winners and losers 2009

![Bar chart showing production winners and losers 2009.](chart.png)
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Fresh Tomato exports 2008

- **Netherlands**: 209,500 tonnes
- **Morocco**: 346,222 tonnes
- **Italy**: 110,801 tonnes
- **Greece**: 3,337 tonnes
- **France**: 179,924 tonnes
- **Spain**: 938,596 tonnes
- **Ukraine**: 32,393 tonnes
- **Croatia**: 523 tonnes

Source: FAOSTAT
• ¿How Fruit and Vegetable UNECE Standards work?
Target: **Uniformity, Transparency**

- I **Definition of produce**
- II **Quality**
  - Requirements (Minimum, Maturity,..)
  - Classification
- III **Sizing**
  - Minimum size, Uniformity
- IV **Tolerances**
  - Quality tolerance, Size Tolerances
- V **Presentation**
  - Uniformity, Packaging
- VI **Marking**
  (Identification, Nature and origen of product, commercial specifications, official control mark)
## QUALITY EVALUATION

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>DEFECTS</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum requirements</td>
<td>Progressive Defects</td>
<td></td>
</tr>
<tr>
<td>Intact, sound, fresh</td>
<td>Fresh or unhealed cracks, not fresh</td>
<td>Out of grade</td>
</tr>
<tr>
<td>Free of damage, pest,</td>
<td>appearance, damages by insect or</td>
<td></td>
</tr>
<tr>
<td>abnormal external</td>
<td>diseases, rotting, internal browning,</td>
<td></td>
</tr>
<tr>
<td>moisture, foreign smell</td>
<td>treatment residues, foreign matters</td>
<td></td>
</tr>
<tr>
<td>or taste,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non progressive</td>
<td></td>
<td>Out of grade</td>
</tr>
<tr>
<td>Quality Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Generic</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>Fresh, Bruises, scratching, cracks,</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Development</td>
<td>healed injuries, cracks, hail,</td>
<td>Very Slight</td>
</tr>
<tr>
<td>Couloring</td>
<td></td>
<td>Extra</td>
</tr>
<tr>
<td>Flesh</td>
<td>Specific</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>According to produce and variety</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>Ribbed tomatoes: Healed Cracks,</td>
<td></td>
</tr>
<tr>
<td>Maturity</td>
<td>Protuberances, Umbilicus, Suberization,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elongated Blossom scar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Defects allowed</td>
<td>II</td>
</tr>
</tbody>
</table>


EU Specific Standard for tomatoes

Regulation EU 543/2011

UNECE Standard FFV-36. TOMATOES
I. Definition of produce

This standard applies to tomatoes of varieties (cultivars) grown from *Solanum lycopersicum* L. to be supplied fresh to the consumer, tomatoes for industrial processing being excluded.

Tomatoes may be classified into four commercial types:

- “round”
- “ribbed”
- “oblong” or “elongated”
- “cherry” tomatoes (including “cocktail” tomatoes).
A. Minimum requirements

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

- intact
- 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
- fresh in appearance
- practically free from pests
- free from damage caused by pests affecting the flesh
- free of abnormal external moisture
- free of any foreign smell and/or taste.

In the case of trusses of tomatoes, the stalks must be fresh, healthy, clean and free from all leaves and any visible foreign matter.

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

- to withstand transportation and handling
- to arrive in satisfactory condition at the place of destination.
Fresh cracks and damages (na)
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Bruising (not allowed)

Unhealed cracks (na)
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Diseases (not allowed)

photo 9 : Pseudomonas - Not allowed

photo 10 : Alternaria - Not allowed
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Rotting (na)

Blossom-end rot (na)

photo 11: Signs of rotting - Not allowed

photo 12: Blossom-end rot - Not allowed
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Internal Browning (na)

photo 13: Internal browning - External appearance - Not allowed
photo 14: Internal browning - Internal appearance - Not allowed
Chilling injury (na)

Watercore (na)
Treatment residues (na)

Not fresh appearance (na)

photo 17: Treatment residues - Not allowed

photo 19: Not fresh in appearance - Not allowed
Quality Class…
Where is the limit?
Shape defects (Round)

(Limit Class I)  (Limit Class II)
Shape defects *(Ribbed)*

Limit Class I

Limit Class II
Shape defects (*Oblong*)

Limit Class I

Limit Class II
Skin defect (Limit Extra Class)
Skin defects. Superficial blemishes

Limit Class I

Limit Class II
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Skin defects. Ghost spots.

Class I Limit

Class II Limit
Healed cracks

Limit Class I (no more than 1 cm)  
Limit Class II (no more than 3 cm)
Small umbilicus

Limit Class I

Limit Class II
Suberization

Limit Class I (up to 1 cm²)

Limit Class II (up to 2 cm²)
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Blossom Scar

Limit Class I

Limit Class II
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Greenback . Limit Class II
Yellowback . Limit Class II
SIZING

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

The following provisions are not applied to trusses of tomatoes and to cherry tomatoes, and are optional for Class II.

To assure uniformity in size, the range in size between produce in the same package shall not exceed

<table>
<thead>
<tr>
<th>Diameter (marked on the package)</th>
<th>Range (mm.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 50</td>
<td>10</td>
</tr>
<tr>
<td>50 &lt; 70</td>
<td>15</td>
</tr>
<tr>
<td>70 &gt; 100</td>
<td>20</td>
</tr>
</tbody>
</table>

For tomatoes sized by weight or by count the differences should be consistent with the differences above mentioned.
Tomatoes Sizing Scale

<table>
<thead>
<tr>
<th>Size code</th>
<th>Diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>( \leq 20 )</td>
</tr>
<tr>
<td>1</td>
<td>&gt; 20 ( \leq 25 )</td>
</tr>
<tr>
<td>2</td>
<td>&gt; 25 ( \leq 30 )</td>
</tr>
<tr>
<td>3</td>
<td>&gt; 30 ( \leq 35 )</td>
</tr>
<tr>
<td>4</td>
<td>&gt; 35 ( \leq 40 )</td>
</tr>
<tr>
<td>5</td>
<td>&gt; 40 ( \leq 47 )</td>
</tr>
<tr>
<td>6</td>
<td>&gt; 47 ( \leq 57 )</td>
</tr>
<tr>
<td>7</td>
<td>&gt; 57 ( \leq 67 )</td>
</tr>
<tr>
<td>8</td>
<td>&gt; 67 ( \leq 82 )</td>
</tr>
<tr>
<td>9</td>
<td>&gt; 82 ( \leq 102 )</td>
</tr>
<tr>
<td>10</td>
<td>&gt; 102</td>
</tr>
</tbody>
</table>
# Tolerances

<table>
<thead>
<tr>
<th>Quality</th>
<th>Extra</th>
<th>Class I</th>
<th>Class II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality</strong></td>
<td>5% (number or weight) Not satisfying requirements but meeting those of Class I</td>
<td>10% (number or weight) Not satisfying requirements but meeting those of Class II</td>
<td>10% (number or weight) Not satisfying requirements but meeting those of Class II</td>
</tr>
<tr>
<td>Sizing</td>
<td></td>
<td>10% (number or weight) produce not satisfying the requirements as regards sizing is allowed</td>
<td></td>
</tr>
</tbody>
</table>
V. Provisions concerning presentation

A. Uniformity

The contents of each Packaged must be uniform and contain only tomatoes of the same origin, variety or commercial type, quality and size (if sized)

The ripeness and colouring of tomatoes in “Extra” Class and Class I must be practically uniform.

Mixtures of tomatoes of different varieties are allowed provided they are uniform in quality, commercial type and colour concerned.

The visible part of the contents of the package must be representative of the entire contents.
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B. Packaging

Tomatoes must be packed to protect the produce properly.

The materials used inside the package must be clean and of a quality such as to avoid any external or internal damage.

The use of paper of stamp bearing trade specification is allowed, provided the **printing or labelling has been done with non-toxic ink or glue.**

**Stickers** affixed to the produce shall be such that, **when removed,** they **neither leave visible traces of glue nor lead to skin defects**

Packages must be free of all foreign matter
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VI. Marking

A. Identification.
   Packer/or dispatcher/shipper: Name and physical address or a code mark officially recognized by the national authority.

B. Nature of produce.
   - “Tomatoes” or “Trusses of tomatoes” mention and commercial type must appear if the contents are not visible from outside.
     (These details must always be provided for “cherry” tomatoes).

   - Name of variety (optional)

C. Origin.
   Country of origin. (optionally regional or local place)

   Mixture of tomatoes: Nature of produce, commercial types and origins must appear.

D. Commercial specifications.
   - Class.
   - Size expressed as minimum and maximum diameters
     (Sizing is optional for class II and cherry tomatoes and trusses)
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Thank you for your attention