



Economic Commission for Europe**Committee on Trade****Working Party on Agricultural Quality Standards****Specialized Section on Standardization
of Dry and Dried Produce****Fifty-seventh session**

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Item 6 (a) of the provisional agenda

New UNECE Standards**Whole Dried Chilli Peppers****UNECE Standard DDP concerning the marketing
and commercial quality control of whole dried
chilli peppers****Submitted by Mexico***

This document has been prepared following the decision of the Working Party to initiate work on a new standard for whole dried chilli peppers (ECE/TRADE/C/WP.7/2007/27, paragraph 32). It is the revised version of document ECE/TRADE/C/WP.7/2008/4.

I. Definition of produce

1. This Standard applies to whole dried chilli peppers of varieties (cultivars) grown from *Capsicum annum* L., (Commercial types: ancho, de árbol, guajillo, mulato, pasilla and puya) intended for direct consumption or for food when they are intended to be mixed with other products for direct consumption without further processing. This Standard does not apply to whole dry chilli peppers for industrial processing.¹

* The present document has been submitted late due to delayed inputs from other sources.

¹ For the correct application of this Standard, see other definitions contained in annex I.

II. Provisions concerning quality

2. The purpose of the Standard is to define the quality requirements of whole dried chilli peppers at the export-control stage, after preparation and packaging.

A. Minimum requirements

3. In all classes, subject to the special provisions for each class and the tolerances allowed, the whole dried pepper must display the following characteristics:

- dried in accordance with section “B. Moisture content”
- intact; however, slight superficial damage is not considered as a defect
- 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
- sufficiently ripe and with peduncle
- shape and colour characteristic of chilli types, in accordance with section “D. Colour”²
- free from pests, including the presence of dead insects and mites, their debris or excreta
- free from blemishes, areas of discolouration or spread stains in pronounced contrast with the rest of the produce
- free from mould filaments visible to the naked eye
- free of abnormal external moisture
- taste (pungency or hotness) characteristic in accordance with section “E. Pungency”
- free of foreign smell and/or taste;

4. The condition of the whole dried chillies must be such as to enable them:

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

B. Moisture content

5. The whole dried chillies shall have different moisture content depending on the type, based on the following designations.

² For examples of colour and visual quality, see annex II.

Table 1

<i>Maximum moisture content in % (m/m)</i>	
Ancho	12.5
De árbol	9.0
Guajillo	13.5
Mulato	12.5
Pasilla	13.5
Puya	10.0

C. Classification

6. Dry chillies are classified in three classes, as defined below:

(i) "Extra" Class

Dry chillies in this class must be of superior quality. They must be characteristic of the variety and/or commercial type as regards development, shape and colour.

They must be free from 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.

(ii) Class I

Dry chillies in this class must be of good quality. They must be characteristic of the variety and/or commercial type. However some slight defects in shape, in colour or skin may be allowed (see IV, Provisions concerning tolerances).

(iii) Class II

This class includes dry chillies that do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified above. They must be characteristic of the variety and/or commercial type. Defects in shape, colour or skin may be allowed (see IV, Provisions concerning tolerances).

D. Colour

7. Colour classification for whole dried chillies is mandatory, depending on the type, based on the colours defined below:

Table 2

<i>Type</i>	<i>Extra</i>	<i>Class I</i>	<i>Class II</i>
Guajillo	Uniform; intense or dark red with no discoloration	Uniform; intense or dark red with no discoloration	Uniform; intense or dark red with slight discoloration
Puya	Uniform; intense or dark red with no discoloration	Not totally uniform; intense or dark red with no discoloration	Not totally uniform; intense or dark red slightly discoloured
Ancho	Uniform; light red to dark red, free from discolouring	Uniform; intense red to dark red with no discoloration	Uniform; intense red to dark red slightly discoloured
Mulato	Uniform; intense black, free from discolouring	Uniform; intense black, free from discolouring	Non-uniform; black, discoloured
Pasilla	Uniform intense black without discolouration	Uniform black without discolouring	Non-uniform; black or greenish. Slightly discoloured
De arbol	Not applicable	Uniform; intense red without any discolouration	Intense red. May present discolouring stains

Note: Typical colours are shown in Annex II.

E. Pungency

8. Pungency is a result of the capsaicinoids content and expresses the hotness degree of chillies. Verification of pungency is optional. Pungency should be analysed in the Scoville scale or by the method of high performance liquid chromatography (HPLC). Table 3 shows a reference of Scoville Units for dry chillies.

Table 3

<i>Dry Chillie</i>	<i>Pungency</i> (<i>Scoville units</i> ³)	<i>Intensity</i>
Ancho	1 000 – 1 500	Low
Mulato	1 000 – 1 500	
Pasilla	1 000 – 1 500	
Guajillo	3 000 – 5 000	Medium
De árbol	5 000 – 30 000	High
Puya	5 000 – 30 000	

³ The Scoville scale is a system to measure the pungency in chillies. High resolution chromatography of liquids (HPLC) can also be used to measure content of capsaicin in chillies.

III. Provisions concerning sizing

9. Fruit size, being a commercial differentiation parameter, is strongly recommended.

10. Sizing is determined according to the length (measure from the apex of the fruit without considering the peduncle), width (at the broader part of the fruit - shoulder) and weight (including the peduncle).

11. Sizing is designated according to the following:

Table 4

<i>Type</i>	<i>Class</i>	<i>Length (cm)</i>	<i>Width (cm)</i>	<i>Weight (g)</i>
Guajillo	Extra	> 14	> 3	> 9
	Class I	10 – 14	2.5 – 3	5 – 9
	Class II	< 10	< 2.5	< 5
Puya	Extra	> 10	> 1.5	> 3.5
	Class I	8 – 10	1.0 – 1.5	3.0 – 3.5
	Class II	< 8	< 1.0	< 3.0
Ancho	Extra	> 10	> 6	> 22
	Class I	7 – 10	5 – 6	20 – 22
	Class II	7 – 10	< 5	< 20
Mulato	Extra	> 10	> 7	> 17
	Class I	7 – 10	5 – 7	14 – 17
	Class II	< 7	< 5	< 14
Pasilla	Extra or "Flower"	> 20	> 3	> 7.5
	Class I	14 – 20	2.5 – 3	7.0 – 7.5
	Class II	< 14	< 2.5	< 7.0
De árbol	Extra	Not applicable	Not applicable	Not applicable
	Class I	9 – 11	> 1.0	1.0 – 1.5
	Class II	7 < 9	< 1.0	< 1.0

IV. Provisions concerning tolerances

12. At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated.

A. Quality tolerances

(i) "Extra" Class

A total tolerance of 10.0 per cent of dry chilli not satisfying the requirements of the class, but meeting those of Class I is allowed. Within this tolerance no more than 1.0 per cent in total may consist of produce satisfying the requirements of Class II quality.

Tolerances of 5.0 per cent of broken fruits are allowed as well as 1.0 percent of foreign matter. No serious defects such as stains, burns, scraped, scars and deformations are allowed.

(ii) Class I

A total tolerance of 10.0 per cent, by weight, of dry chilli not satisfying the requirements of the class but meeting those of Class II is allowed. Whithin this tolerance not more than 1 percent in total may consist of produce not satisfying the requirements of Class II quality.

Tolerances of 5.0 per cent of broken fruits are allowed as well as 1.0 percent of foreign matter. Up to a 10.0 per cent of serious defects such as stains, burns, scraped, scars and deformations in no more than 5.0 per cent of the fruit are allowed.

(iii) Class II

A total tolerance of 10 per cent, by weight, of dry chilli satisfying neither the requirements of the class nor the minimum requirements is allowed. Within this tolerance not more than 2 per cent in total may consist of fruit affected by serious defects.

Tolerances of 5.0 per cent of broken fruits are allowed as well as 1.0 percent of foreign matter. Up to a 10.0 per cent of serious defects such as stains, burns, scraped, scars and deformations may be permitted.

V. Provisions concerning presentation

A. Uniformity

13. The contents of each package must be uniform and contain only whole dried chillies of the same origin, quality, size and variety or commercial type.

14. The visible part of the contents of the package must be representative of its entire contents.

B. Packaging

15. Whole dried chillies must be packed in such a way as to protect the produce properly.

16. The materials used inside the package must be new, clean and of a quality so 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.

17. Packages must be free of all foreign matter in accordance with the table of tolerances in section "IV. Provisions concerning tolerances".

VI. Provisions concerning marking

18. Each package⁴ must bear the following particulars in letters grouped on the same side, legibly and indelibly marked and visible from the outside:

A. Identification

19. Packer and/or Dispatcher: Name and physical address (e.g. street/city/region/postal code and, if different from the country of origin, the country) or a code mark officially recognized by the national authority⁵.

B. Nature of produce

- name of the produce
- name of the variety and commercial type
- type or style.

C. Origin of produce

- country of origin and, optionally, district where grown or national, regional or local place name.

D. Commercial specifications

- class
- size (if sized; expressed in accordance with section III)
- variety and/or commercial type
- code or lot number
- crop year and month
- packing date.

E. Official control mark (optional)

⁴ Package units of produce repacked 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 in any event be shown on the transport packaging containing such package units.

⁵ The national legislation of a number of countries requires the explicit declaration of the name and address. However, in cases where a code mark is used, the reference “packer and/or dispatcher” (or equivalent abbreviations) must be indicated in close connection with the code mark, and the code mark should be preceded by the ISO 3166 alpha country code of the recognizing country, if not the country of origin.

Annex I

Commonly used terminology for whole dried chillies

Ancho chilli:

Fruits have a conical shape, with sizes that vary in longitude and width. The base of the insertion of the peduncle can be flat or with indented shoulders; the body is generally flattened; the apex is pointed or round, and presents from two to four loculi. Its production as dry pepper is achieved mostly by artificially dehydrating the fruits, although a large part of this type of chilli is commercialized fresh.

De árbol chilli:

Small fruits, with a uniform intense or dark red coloration, with no discoloration, cylindrical, with a shape prominently long and pointed, characterized by their high pungency.

Guajillo chilli:

Also known as mirasol. Generally, it is long, with a sharp end; its body is cylindrical, smooth and with slight undulations. It has two to three locules; its position is hanging, even when there are some variants with erected fruits. This type of chilli is moderately pungent and its commercial production is in its majority dried in the plant in a natural way.

Mulato chilli:

With a shape similar to the ancho chilli, it has the same variation in the growth habit and shape of the fruit, but generally less pungent. The basic difference with ancho chilli is the colour, which is dark brown when ripe and blackish brown once it is dehydrated.

Pasilla chilli:

Fruit with a long undulated body that ends in a flat or pointed apex; it presents from two to three loculi. Its production is mainly destined for dehydrating, with a small amount consumed fresh.

Puya chilli:

Elongated fruit, medium size, smaller than mirasol chillies and bigger than de árbol chillies, with a uniform intense red or dark red colour, with no discoloration. Its production is dehydrated mainly in a natural way in the plant before use in salsas. After the de árbol chilli, it is considered highly pungent.

Dried chilli (Dehydrated):

Fruit that has undergone a process of water loss by natural or artificial means.

Capsaicinoids:

Compounds responsible for the pungent or hot flavour in the chillies. The main and most pungent of all capsaicinoids is the Capsaicin, which is found in the seeds and placenta of the peppers.

Locule:

Small chamber or cavity of the fruit that is formed by the arranging of the walls of the ovary; it is observed by making a transversal cut.

Foreign matter:

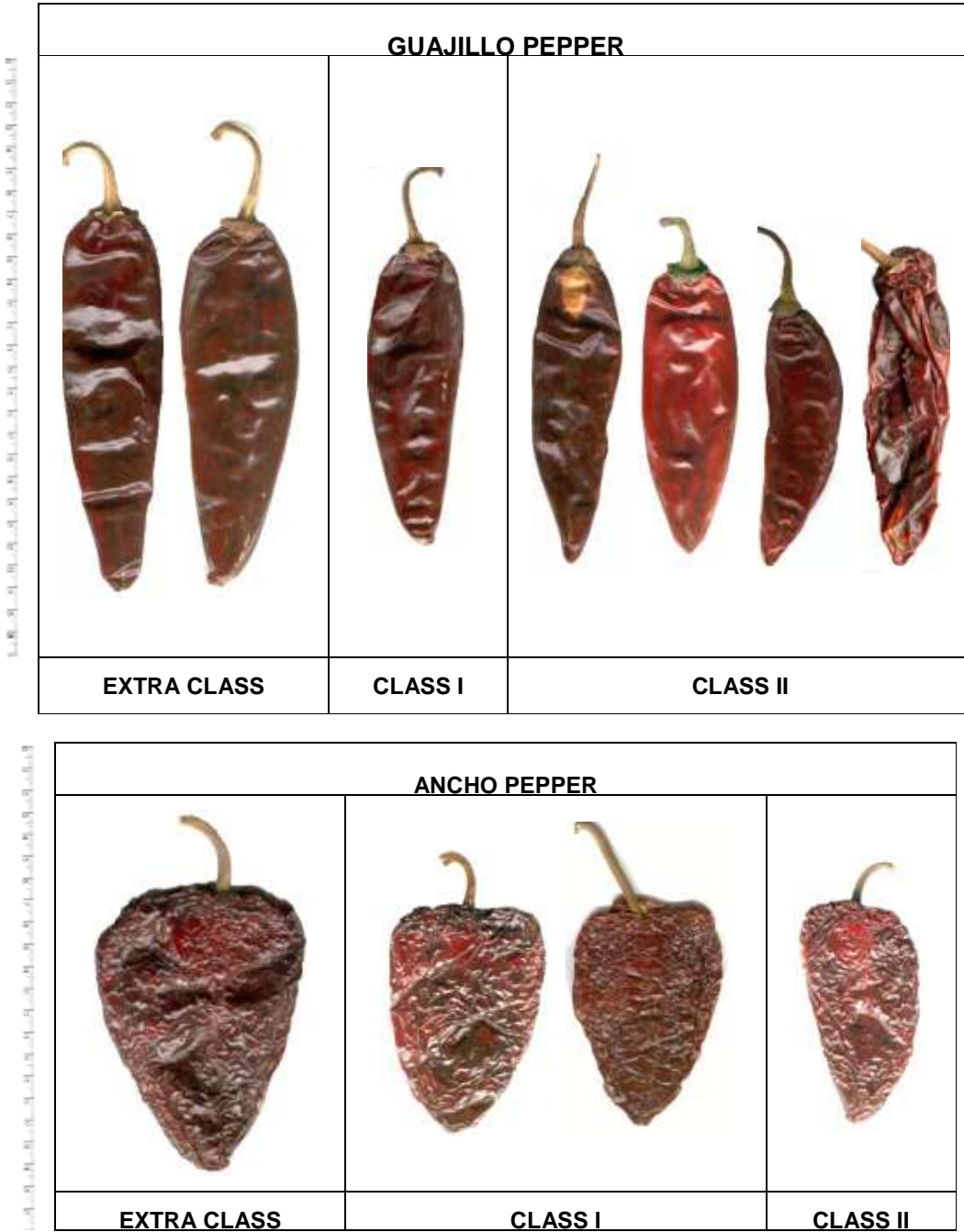
All material or substance different to that which constitutes the fruit and the peduncle. This includes: stalks, dirt, sand, stones, waste, wires, cords, foreign seeds, dust and leaves, as well as insect debris.




Pungency:




Sharp or intense sensation caused by the effect of the capsaicins after the ingestion of chilli or its sub-products.




Annex II



Whole dehydrated chillies - Examples of colour and visual quality



MULATO PEPPER		
		
EXTRA CLASS	CLASS I	CLASS II

PASILLA PEPPER		
		
EXTRA CLASS OR FLOWER	CLASS I	CLASS II

PUYA PEPPER		
		
EXTRA CLASS	CLASS I	CLASS II

DE ÁRBOL PEPPER		
DOES NOT APPLY		
EXTRA CLASS	CLASS I	CLASS II

References

- ISO 972: 1997: Chillies and capsicums, whole or ground (powdered) - Specifications.
- ISO 930: 1997: Spices and condiments - Determination of acid-insoluble ash
- ISO 3513:1995 Chillies - Determination of Scoville index Edition: 2
- ISO 7543-1 Chillies and chilli oleoresins - Determination of total capsaicinoid content - Part 1: Spectrometric method
- ISO 7543-2 Chillies and chilli oleoresins - Determination of total capsaicinoid content - Part 2: Method using high-performance liquid chromatography
- Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias. Centro de Investigación Regional del Noreste. Campo Experimental Palma de la Cruz. Nuevas Variedades del Chile Mirasol para el Centro Norte de México. Folleto Técnico Nro. 21, Marzo 2001.
- Pozo Campodónico, Octavio. Descripción de Tipos y Cultivares de Chile (*Capsicum* spp.) en México. Secretaría de Agricultura y Recursos Hidráulicos/Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (SARH/INIA). Folleto Técnico Nro. 77, Octubre 1981.
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