

Subject: Food Technology

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Paper No. : 10 Technology of Spices and Condiments

Module : 15 Chillies: Quality attributes of chillies



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Description of Module	
Subject Name	Food Technology
Paper Name	10 Technology of Spices and Condiments
Module Name/Title	Chillies: Quality attributes of chillies
Module Id	
Pre-requisites	
Objectives	
Keywords	

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Classification of chilli

Whole dried chilli peppers are classified into the following classes:

“Extra” Class, Class I and Class II.

The defects allowed must not affect the general appearance of the produce as regards quality, keeping quality and presentation in the package.

15.1. Chillies: Quality attributes of chillies

The whole dried chilli peppers must display the following characteristics:

- 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 developed and with attached peduncle.
- shape and colour characteristic of chilli types.
- free from living pests whatever their stage of development.
- free from damage caused by pests, including the presence of dead insects and/or mites, their debris or excreta;
- free from blemishes, areas of discolouration or spread stains in pronounced contrast with the rest of the produce affecting in aggregate not more than 5 per cent of the surface of the produce.
- free from mould filaments visible to the naked eye.
- free of abnormal external moisture.
- free of foreign smell and/or taste.

The condition of the whole dried chilli peppers must be such as to enable them:

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

15.1.1. Moisture content

Whole dried chilli peppers should have maximum moisture content in accordance with the following table:

Varieties of Chilli	Moisture content (%)
Ancho	12.5
De árbol	9.0
Guajillo	13.5
Mulato	12.5
Pasilla	13.5
Puya	10.0

15.1.2. Colour

Colour requirement for whole dried chillies is mandatory for the commercial types in accordance with the table below:

TYPE	EXTRA	CLASS 1	CLASS 2
Guajillo	Uniform; intense or dark red with no discoloration	Uniform; intense or dark red with no discoloration	Uniform; intense or dark 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

15.1.3. Pungency

Commercial types of whole dried chili peppers are characterized by pungency in accordance with the following table:

Dry Chilli	Total capsaicinoids (µg/g dry weight)	Pungency Intensity (Scoville units)	Intensity
Ancho	67 – 100	1 000 – 1 500	Mild
Mulato	67 – 100	1 000 – 1 500	Mild
Pasilla	67 – 100	1 000 – 1 500	Mild
Guajillo	201 - 335	3 000 – 5 000	Medium
De árbol	335 – 2010	335 – 2010	Medium - Hot
Puya	335 – 2010	335 – 2010	Medium - Hot

15.1.3.1. Provisions concerning sizing

Sizing of whole dried chilli peppers is mandatory for “Extra” Class and Class I. Size is determined by the length (measured from the apex of the fruit without considering the peduncle).

Type	Class	Length(cm)
Guajillo	Extra	> 14
	Class I	10 – 14
	Class II	< 10
Puya	Extra	> 10
	Class I	8 – 10
	Class II	< 8
Ancho	Extra	> 10
	Class I	7 – 10
	Class II	7 – 10
Mulato	Extra	> 10
	Class I	7 – 10
	Class II	< 7
Pasilla	Extra	> 20
	Class I	14 – 20
	Class II	< 14
De árbol	Class I	9 – 11
	Class II	< 9

15.1.3.2. Provisions concerning tolerances

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

Quality tolerances

Defects allowed	Extra	Class I	Class II
(a) Tolerances for produce not satisfying the minimum requirements,	5	10	15
Of which no more than			
- Blemishes, stains, discolorations, burns, scratches, scars, deformations	2	5	10
- Decayed and mouldy fruit	0.5	1	2
- Damaged by pests	0.5	0.5	1
- Living pests	0	0	0
(b) Size tolerances			
- For produce not conforming to the size indicated, if sized	10	10	10
(c) Tolerances for other defects			
- Missing stems and broken fruit	5	7	10
- Foreign matter (by weight)	1	1	1
- Foreign matter of plant material	1.5	1.5	2
- Whole dried chilli peppers belonging to commercial types other than that indicated	5	10	10

15.2. Commonly used terminology for whole dried chillies:

15.2.1. 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.

15.2.2. 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.

15.2.3. 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.

15.2.4. 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.

15.2.5. 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.

15.2.6. Puya chilli:

It is an 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.