
International Standard



972

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Chillies and capsicums, whole or ground (powdered) — Specification

Piments dits «piments enragés» et piments forts entiers ou en poudre — Spécifications

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 972 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

It cancels and replaces ISO Recommendation R 972-1969, of which it constitutes a technical revision.

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0 Introduction

Whole chilli and capsicum species which are traded all contain a pungent principle made up of capsaicinoids. The amount of pungent principle present is widely variable from one variety to another but nevertheless it is a parameter which can be quantitatively measured which determines the essential characteristic of chillies and capsicums.

Dimensions, shape and colour vary widely and no meaningful classification is possible by these traditional methods.

Whole chillies and capsicums traded internationally are not generally bought on the basis of capsaicinoid content, but on established origins/types suitable to the specific importer. Colour and/or size are also parameters which may come into consideration in international trade. However, the detailed requirements of the importer require checking on each consignment, since capsaicinoid content, colour and size can vary widely between consignments and from crop to crop. In international trade, a rough differentiation is made between chillies and capsicums on purely a size basis, varieties above 25 mm in length being considered a capsicum. However, it is also accepted that many varieties classified as capsicums may have a heat strength (capsaicinoid content) above that of certain chilli varieties.

Consequently, no limits of capsaicinoid content are laid down to differentiate between chillies and capsicums although as a general principle it may be taken that capsicums have a lower capsaicinoid (heat) content.

A classification of chillies and capsicums common in international trade, grouped approximately into two levels of capsaicinoid content (heat strength), is given in annex A. However, this list is by no means complete and many other varieties exist.

Ground chillies and capsicums are a lesser item of international trade.

1 Scope and field of application

This International Standard specifies requirements for chillies and capsicums in whole or in ground (powdered) form.

From the botanical point of view, two main species of capsicum are concerned, *C. annuum* Linnaeus and *C. frutescens* Linnaeus, and their crossings *C. chinese*, *C. pubescens* and *C. pendulum*.

This International Standard does not apply to "chili powder" (see the note to 3.2).

Information on the classification of whole chillies and capsicums and recommendations relating to storage and transport conditions are given in annexes A and B, respectively.

2 References

ISO 927, *Spices and condiments — Determination of extraneous matter content.*

ISO 928, *Spices and condiments — Determination of total ash.*

ISO 930, *Spices and condiments — Determination of acid-insoluble ash.*

ISO 939, *Spices and condiments — Determination of moisture content — Entrainment method.*

ISO 948, *Spices and condiments — Sampling.*

ISO 5498, *Agricultural food products — Determination of crude fibre content — General method.*

3 Description

3.1 Chillies and capsicums are the juiceless dried pods (fruits) of plants of the genus *Capsicum*. In longitudinal cross-section, the pods are roughly triangular in shape, with the base of the triangle at the point of attachment to the peduncle (stalk). The angles within this triangular shape may vary widely, the angle opposite the point of attachment of the peduncle being generally very acute, but becoming, in rare cases, depending on the species, obtuse.

The pods contain variable numbers of yellow-white, hard, disc-like seeds, 1 to 5 mm in diameter. The number and size of the seeds is dependent on the species.

In growth, the seeds are attached individually to a relatively soft (spongy) central core within the pod by individual "placenta" (seed stalks), but in dried commercial chilli or capsicum the seeds have often become detached from the central core and move freely within the pod.

The placenta contains the highest concentration of the pungent capsaicinoids.

The mature pods may vary in colour from dark blackish-red through orange-yellow to yellow-green, according to the species. The material pigmentation, particularly red, is affected by exposure to air and light during storage and the intensity decreases with time.

Dimensions may vary from 20 to 120 mm long and between 4 and 50 mm in diameter, again according to the species.

3.2 Ground powdered chillies and ground powdered capsicums are the products obtained by grinding whole chillies and capsicums, respectively, without any added matter.

These products take the form of a powder of widely varying colour, from deep-red through orange-yellow to pale green, according to the species.

The powder may be ground to any required particle size, and blends are often made of various chillies/capsicums to maintain a constant "heat strength" (capsaicinoid content) or colour.

For international trade, the usual maximum particle size is 500 µm.

NOTE — "Chili powder" is the term usually applied to a blend of ground capsicums and other spices available as a homogeneous mix. The product and terminology originates in the USA. As a mixture of spices, "chili powder" is outside the scope of this International Standard.

4 Requirements

4.1 Odour and flavour

Chillies and capsicums shall have a characteristic odour, initially pleasant and fruity, followed quickly by a strongly acrid note causing nasal irritation.

Similarly, the flavour shall be characteristic, initially pleasantly sweet and fruity, followed by a strongly acrid burning sensation which is very persistent.

4.2 Freedom from insects, moulds, etc.

Chillies and capsicums, whole or ground (powdered), shall be free from living insects and moulds, and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision), or with such magnification as may be necessary in any particular case. If the magnification exceeds X 10, this fact shall be stated in the test report.

4.3 Extraneous matter

Extraneous matter includes:

- a) all matter present in the sample which is not from chillies or capsicums of the variety under consideration;

- b) all other foreign matter and, in particular stalks, leaves, soil, sand.

Extraneous matter does not include unripe, marked or broken fruits of the variety under consideration (see 4.4).

The proportion of extraneous matter in whole chillies and capsicums, when determined by the method described in ISO 927, shall not exceed 1 % (*m/m*).

4.4 Unripe, marked or broken fruits

The proportion of unripe, marked or broken chillies and capsicums in whole chillies and capsicums shall not exceed 2 % (*m/m*).

NOTE — A method of determination will form the subject of a future International Standard.

4.5 Chemical requirements¹⁾

Whole or ground (powdered) chillies and capsicums shall comply with the requirements given in table 1.

Table 1 — Chemical requirements

Characteristic	Requirement	Method of test
Moisture content, % (<i>m/m</i>), max.	11	ISO 939
Total ash, % (<i>m/m</i>) on dry basis, max.	10	ISO 928
Acid-insoluble ash, % (<i>m/m</i>) on dry basis, max.	1,6	ISO 930
Crude fibre content, % (<i>m/m</i>) on dry basis, max.	28	ISO 5498

In addition, the proportion of ground (powdered) chillies or capsicums that passes through a sieve of nominal aperture size 500 µm shall not be less than 95 %.

5 Sampling

Sample the chillies and capsicums, whole or ground (powdered), by the method specified in ISO 948.

6 Methods of test

Test samples of whole chillies and capsicums and ground (powdered) chillies and capsicums for conformity to the requirements of this International Standard by the methods of test referred to in 4.3 and table 1.

NOTE — A method for the preparation of the test sample will form the subject of a future International Standard.

1) Limits for toxic substances will be included later, in accordance with recommendations of the Joint FAO/WHO Codex Alimentarius Commission.

7 Packing and marking

7.1 Packing

7.1.1 Whole chillies and capsicums

Whole chillies and capsicums shall be packed in clean, sound containers made of a material which does not affect the product.

7.1.2 Ground (powdered) chillies and capsicums

Ground (powdered) chillies and capsicums shall be packed in clean, sound, airtight, opaque containers, made of a material which does not affect the product.

7.2 Marking

7.2.1 Whole chillies and capsicums

Each container shall be marked or labelled with the following information:

- a) name of the product, and the trade name or brand name, if any;
- b) name and address of the producer or packer;
- c) net mass;
- d) producing country;
- e) possibly, a reference to this International Standard.

7.2.2 Ground (powdered) chillies and capsicums

Each container shall be marked or labelled with the following particulars:

- a) name of the product, and the trade name or brand name, if any;
- b) name and address of the producer or packer;
- c) net mass;
- d) possibly, a reference to this International Standard.

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Annex A

Classification of whole chillies and capsicums

(This annex does not form part of the standard.)

The "heat strengths" and trade names of some of the types of whole chillies and capsicums available in international trade are given in table 2.

Table 2 – Classification of whole chillies and capsicums

Heat strength	Trade name	Producing country
Very hot species	Mali Chillies	Mali
	Chilitepin	Mexico
	Tabasco	Mexico
	Mexican Green Chillies	Mexico
	Li Ling	China
	Fukien Rice Chillies	China
	Hainan	China
	Kwang Si	China
	Hantan	China
	Haimen	China
	Mombasa Chillies	Uganda
	Malawi	Malawi
	Zanzibar	Tanzania, United Republic of
	Kenya	Kenya
	Hontaka	Japan
	Tentakaka	Japan
	Birds Eye Chillies	Papua New Guinea
	Dandicut Chillies	Pakistan
	Louisiana Chillies	USA
	Sport Peppers	USA/Mexico
Birds Tongues (Madagascar Chillies)	Madagascar	
Ancho	Mexico	
Thai red chillies	Thailand	
Hot species	Pakistan	Pakistan
	Sian Stemless	China
	Sannam S4	India
	Malaga	India
	Santaka	Japan
	Finger Peppers	Turkey
	Zanzibar (Tanzania)	Tanzania, United Republic of
	Bombay Chillies	India
	Morocco Capsicum	Morocco
	Chillie Seeds	China
Bang Chang chillies	Thailand	

Annex B

Recommendations relating to storage and transport conditions

(This annex does not form part of the standard.)

B.1 Chillies and capsicums should be stored in opaque containers which allow passage of air and exclude as much light as possible. The storage premises should be well protected from the sun, rain and excessive heat.

B.2 The store room should be dry, free from objectionable odours and proofed against the entry of insects and vermin. The ventilation should be controlled so as to give good ventilation under dry conditions and to be fully closed under damp conditions. In a storage warehouse, suitable facilities should be available for fumigation.

B.3 The containers should be so handled and transported that they are protected from the rain, from the sun or other source of excessive heat, from unpleasant odours and from cross-infestation, especially in the holds of ships.

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