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# International Standard



# 6659

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Sweet pepper — Guide to refrigerated storage and transport

*Poivrons doux — Guide pour l'entreposage et le transport réfrigérés*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 6659 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in April 1980.

It has been approved by the member bodies of the following countries :

Australia	Israel	Romania
Austria	Kenya	South Africa, Rep. of
Brazil	Malaysia	Spain
Canada	Netherlands	Turkey
Czechoslovakia	New Zealand	USA
Egypt, Arab Rep. of	Peru	USSR
France	Philippines	Yugoslavia
Hungary	Poland	
India	Portugal	

No member body expressed disapproval of the document.

# Sweet pepper — Guide to refrigerated storage and transport

## 1 Scope and field of application

This International Standard specifies a method for the storage, over short durations, of sweet peppers (*Capsicum annum* L.) for direct consumption, in refrigerated storehouses and during refrigerated transport.

It is not applicable to sweet peppers for industrial processing. The limits of application of this International Standard are defined in annex A.

## 2 Conditions of harvest and putting into store

### 2.1 General

Sweet peppers shall be harvested in cool and dry weather. Only those fruits at a suitable stage of maturity, i.e. those of shape, stage of development and normal colour for the variety, shall be harvested. They may also be harvested at the stage of physiological maturity (red).

### 2.2 Quality characteristics

Selection and sorting shall be carried out immediately after harvesting. Sweet peppers intended for storage shall be sound, clean, turgid, well developed, without surface moisture, free from unhealed injuries and from damage due to frost (frostbite) and sunburn.

### 2.3 Storage

Sweet peppers shall be stored as quickly as possible after selection and sorting. Before storage, they should be kept for a few hours in a cool place.

When quality graded and sized, each package shall contain only peppers of the same variety or commercial type and the same grade and size.

Packages shall be handled carefully, in order that the surfaces of the peppers are not damaged.

The packages shall be stacked in such a manner as to ensure uniform air circulation through the stacks.

## 3 Conditions for storage

### 3.1 Temperature

The recommended temperatures for storage of Romanian and Hungarian cultivars of sweet peppers are given in annexes B and C respectively. For other cultivars, green peppers should be stored at 7 to 8 °C and red peppers at 4 to 6 °C.

NOTE — The fruit is sensitive to overcooling, which may cause damage.

### 3.2 Relative humidity

Relative humidity is a factor of great importance for maintaining the turgidity of the fruits.

It is recommended that the relative humidity of the air is between 90 and 95 % in storage spaces.

If the relative humidity of the air falls below 90 %, the turgidity of the fruits may be preserved by covering the piles of boxes with polyethylene sheets which should be raised for 1 to 2 h each day for ventilation purposes.

### 3.3 Air circulation

The ventilation system used in storage spaces shall ensure constant and uniform temperature and relative humidity.

### 3.4 Period of storage

The recommended periods of storage of Romanian and Hungarian cultivars of sweet peppers are given in annexes B and C respectively. For other cultivars, the period of storage varies between 10 and 30 days, according to the variety, degree of maturity, climatic conditions and culture system.

### 3.5 Operations during and at the end of storage

As sweet peppers are perishable, it is recommended that the quality of fruits be checked every 2 to 3 days and that those fruits showing signs of loss of turgidity, or damage caused by disease or insects, be immediately removed.

## 4 Conditions for transport

### 4.1 Quality characteristics

Sweet peppers intended to be transported shall be of high quality. They shall correspond to the requirements of 2.2.

### 4.2 Temperature

Before loading, it is recommended that the peppers be pre-cooled. If the temperature of the fruits exceeds + 18 °C to + 20 °C, they should be rapidly cooled to + 8 °C.

After loading, the temperature conditions during transport depend on the duration of transport as follows :

Duration of transport (days)	Temperature °C
3 to 5	+ 5 to + 8
6 to 10	+ 8
11 to 14	+ 8 to + 8,5

Red peppers may be transported at + 4 °C to + 6 °C.

Cooling slowly in the transport vehicle is conducive to deterioration.

### 4.3 Packing

For the transport of sweet peppers, use fibreboard, wooden or plastics containers.

### 4.4 Relative humidity

During transport, the recommended relative humidity is 80 to 90 %.

### 4.5 Ventilation

The method of storing the peppers in boxes, and the method of stacking in the transport vehicle, shall provide adequate ventilation in order to assist the removal of heat from the mass of produce.

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## Annex A

### Limits of application

This International Standard gives general recommendations.

In view of the great number of varieties and culture systems of this species, this International Standard may be adapted for specific varieties and for the respective pedoclimatic areas.

The recommendations of this International Standard apply only to the storage of sweet peppers over short durations.

## Annex B

### Romanian cultivars of sweet peppers

Type	Cultivar	Temperature °C	Duration of conservation days
Sweet pepper	Du Danube Bruisma Wonder	+ 7 to + 8 + 7 to + 8	20 to 25 20 to 25
	Export Jaune supérieur Jaune de Banat Favoritul pietei	+ 7 to + 8	10 to 15
Tomato pepper	Rotunda Bucuresteni Superb Urias dulce	+ 4 to + 6	40 to 45
Langs pepper	Lung romanesc Kapia Zlaten medalii	+ 4 to + 6	45 to 50

## Annex C

## Hungarian cultivars of sweet peppers

Type	Cultivars	Temperature °C	Duration of conservation days
Green pepper	White : Cecei Keszthelyi Soroksári Góliát Fehérözön White-green : Szentesi Green : California Wonder Danube Propa	+ 8 to + 9	14
Tomato paprika	Szentesi Pallagi Szarvasi 11	Green : up to 8 to 9 Red : up to 4 to 6	14 35

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