

TC 34

INTERNATIONAL STANDARD



949

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

Cauliflowers — Guide to cold storage

Choux fleurs — Guide pour l'entreposage par réfrigération

First edition — 1978-12-15

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[ISO 949:1978](#)

<https://standards.iteh.ai/catalog/standards/sist/4082e36a-8e65-436f-88c6-ae8e794a3b2c/iso-949-1978>

UDC 635.35 : 664.8.037

Ref. No. ISO 949-1978 (E)

Descriptors : agricultural products, vegetables, cauliflowers, storage, food storage, cold storage.

Price based on 2 pages

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 949 was developed by Technical Committee ISO/TC 34, *Agricultural food products*.

It was submitted directly to the ISO Council, in accordance with clause 6.13.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 949-1969, which had been approved by the member bodies of the following countries :

Australia	Hungary	Norway
Bulgaria	India	Poland
Colombia	Iran	Portugal
Czechoslovakia	Israel	Romania
Egypt, Arab Rep. of	Korea, Rep. of	Thailand
France	Netherlands	U.S.S.R.
Greece	New Zealand	Yugoslavia

No member body expressed disapproval of the document.

Cauliflowers – Guide to cold storage

1 SCOPE AND FIELD OF APPLICATION

This International Standard sets out methods for obtaining conditions for the successful storage of cauliflowers of the varieties derived from *Brassica oleracea* (Linnaeus) var. *botrytis* (Linnaeus).

2 REFERENCE

ISO 2169, *Fruits and vegetables – Physical conditions in cold stores – Definitions and measurement.*

3 CONDITIONS OF HARVESTING AND PUTTING INTO STORE

3.1 Harvesting

Cauliflowers intended for storage should be harvested before maximum development of the curds. They should preferably be harvested in the morning.

The date of harvesting should be determined according to the state of maturity of the curds. In hot weather, a delay of even one day in harvesting may cause yellowing, splitting and spreading of the curds.

3.2 Quality characteristics for storage

The curds should be fresh in appearance, whole, sound and clean, free from defects such as evidence of attack by rodents or insects, and free from visible signs of disease, frost damage or bruising. Curds showing blemishes from any source should be excluded. As far as possible, the curds should be free from traces of water in the liquid state.

3.3 Treatment before storage

It is not recommended that the cauliflowers should be washed before storage. Moreover, it is not recommended that all the leaves should be retained. A few protective leaves and a stalk cut short give the most favourable conditions.

3.4 Putting into store

The cauliflowers should be sent to the cold store as soon as possible after harvesting, as after even 48 h at a temperature of 15 °C, the curds begin to yellow and changes due to bacteria or fungi become evident. These changes are irreversible. If transport between the place of harvesting and the cold store requires several days, the cauliflowers should be cooled before transport.

3.5 Method of storage

The best types of packages are wooden crates of open construction. It is recommended that the cauliflowers should be arranged in two layers at most, subject to a sufficient quantity of outer leaves being left. The upper layer should be arranged in such a way as not to injure the curds of cauliflowers in the lower layer. Cauliflowers which have lost their protective leaves should be arranged in one layer only, with their curds upwards.

Parchment paper or plastic foil (such as polyethylene, polyvinyl chloride, etc.) may be used to retard the loss of moisture. These materials may be used either to line the boxes or to cover a stack of crates.

4 OPTIMUM STORAGE CONDITIONS¹⁾

4.1 Temperature

It is recommended that the cauliflowers should be stored at a temperature within the range 0 to 2 °C. Temperatures below 0 °C lead to changes due to frost. The temperature chosen should be kept constant during the period of storage.

4.2 Relative humidity

It is recommended that the relative humidity should be 90 %. Lower relative humidities lead to withering of the curds, and consequently to a shorter storage life.

1) For definitions and measurement of the physical quantities affecting storage, see ISO 2169.

4.3 Air circulation

The air circulation should be so arranged that the temperature and relative humidity indicated in 4.1 and 4.2 can be maintained constant and uniform.

4.4 Storage life

By adopting the above conditions, a storage life of 3 to

6 weeks can be obtained, according to the varieties of cauliflowers.

4.5 Operations at the end of storage

After storage, the cauliflowers should be inspected and any yellowed or otherwise affected leaves removed. The stalks should also be re-cut.

ANNEX

LIMITS OF APPLICATION

This International Standard provides guidance of a very general nature only. Because of the variability of the product according to the time and place of cultivation, local circumstances may make it necessary to specify other conditions of harvesting or other physical conditions in the store.

This International Standard does not apply unreservedly, therefore, to all varieties in all climates, and each specialist will himself decide any modifications to be made.

Moreover, this International Standard does not take into account the role played by horticultural factors, and wastage during storage is not dealt with.

Subject to all possible restrictions arising from the fact that vegetables are living material and may vary considerably, the application of the recommendations contained in this International Standard should enable much wastage in storage to be avoided and satisfactory storage to be achieved in most cases.