

International Standard



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Garlic — Guide to cold storage

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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 developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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 6663 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in May 1981.

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

Australia	Korea, Rep. of	Spain
Brazil	Mexico	Sri Lanka
Czechoslovakia	Netherlands	Tanzania
Egypt, Arab Rep. of	New Zealand	Turkey
Ethiopia	Peru	USA
Hungary	Philippines	USSR
India	Portugal	Yugoslavia
Ireland	Romania	
Israel	South Africa, Rep. of	

The member body of the following country expressed disapproval of the document on technical grounds :

France

Garlic – Guide to cold storage

1 Scope and field of application

This International Standard describes a method of cold storage allowing conditions to be obtained for the successful keeping of garlic (*Allium sativum* Linnaeus) intended for consumption in the fresh state.

The limits of application of the method are given in the annex.

2 Conditions of harvesting and putting into store

2.1 Harvesting

Garlic intended for storage should be harvested when the tips of the leaves begin to turn yellow and the mass of the bulb no longer increases. The bulbs should be well formed, physiologically at rest, the protective exterior scale being dry and of characteristic colour.

Harvesting should be carried out during dry weather, over a short period of time.

2.2 Quality characteristics for storage

Only those varieties (cultivars) of garlic suitable for long-term keeping should be stored. Garlic intended for cold storage should be of good commercial quality. It should be clean, dry, whole, firm, ripe but not sprouting, and healthy, with a dry exterior scale, and should be free from all field- and store pests (nematodes and mites).

2.3 Various treatments

After harvesting, the garlic should be dried. This operation is begun in the fields and is continued in the stores. Disinfection of the bulbs with methyl bromide (bromomethane) is permissible only for garlic to be used for seed.

2.4 Putting into store

With the exception of onion, garlic should not be stored with other produce. The stores should be filled within a short period of time.

2.5 Method of storage

Garlic should be packed for storage in cases (boxes), box pallets (boxes which can be stored on pallets), metal mesh containers or sacks which can be stored on pallets.

Sacks should be filled in a manner that ensures air circulation. The packages should be whole, clean and disinfected. Box pallets or sacks on post pallets may be stacked up to five or six high, whilst in the case of boxes which can be stored on pallets, stacking may be up to 8 or 9 high, leaving spaces to allow the circulation of air in all directions.

A space of about 1,50 m should be left both below and above the stacks.

3 Optimum storage conditions

3.1 Temperature

Garlic should be dried in the store at 20 to 30 °C for 8 to 10 days. The temperature should then be reduced to 0 °C and this temperature should be maintained throughout the period of storage, variations not exceeding $\pm 0,5$ °C.

3.2 Relative humidity

During drying, and subsequently during storage, the relative humidity of the air should be maintained between 65 and 70 %.

3.3 Air circulation

Air circulation should be maintained permanently to ensure a homogeneous temperature.

3.4 Storage life

The storage life varies with the variety (cultivar) and method of cultivation from 130 to 220 days. The condition of the stored produce should be checked every 7 to 10 days.

3.5 Operations at the end of storage

When removed from the coldroom, the garlic should be gradually rewarmed to avoid condensation forming on the surface of the product.

If required, the garlic should be sorted according to quality.