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STANDARD

1134

Second edition
1993-10-15

Pears — Cold storage

Poires — Entreposage réfrigéré



Reference number
ISO 1134:1993(E)

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 1134 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Sub-Committee SC 14, *Fresh fruits and vegetables*.

This second edition cancels and replaces the first edition (ISO 1134:1980), which has been technically revised.

Annexes A and B of this International Standard are for information only.

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Introduction

This International Standard provides guidance of a very general nature only. Because of the variability of the fruit 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 decide on any modifications to be made.

Moreover, it does not take into account the role played by horticultural factors, and wastage during storage is not dealt with. The importance of these two subjects has not been forgotten, but the influential factors (i.e. ecological or agrotechnical factors) are not very well known; moreover, the origin of many of the most frequent physiological disorders of pears is still uncertain, as are often the appropriate means of combating them. It was therefore considered difficult to prepare recommendations on these two points.

Nevertheless, it was considered useful to give, in annex B, a few recommendations which appear sufficiently well founded in the present state of knowledge.

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

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Pears — Cold storage

1 Scope

This International Standard gives guidance on conditions for the successful cold storage of varieties of pears (*Pyrus communis* Linnaeus) up to their use in the fresh state.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2169:1981, *Fruits and vegetables — Physical conditions in cold stores — Definitions and measurement*.

AGRI/WP.1/EUR.STAN.1, *Apples and pears*.¹⁾

3 Conditions for harvesting and storage

3.1 Harvesting

The practical criteria of ripeness most frequently used for defining the best time for harvesting²⁾ are the following.

- a) Basic colour of the outer skin:³⁾ judged with the aid of a standard table.

1) Revised European Standard, recommended by the Working Party on Standardization of Perishable Produce and Quality Development of the Economic Commission for Europe.

2) The number of days after flowering is also used sometimes as a criterion for harvesting.

3) The basic colour should be distinguished from the red anthocyanin pigmentation, the intensity and extent of which vary according to the variety and, to some extent, with exposure to sunlight.

- b) Firmness of the flesh: estimated by means of a spring penetrometer.
- c) The total soluble solids content of the fruit, which should be at least 10 % at harvest: determined by a refractometer.
- d) Ease of separation.
- e) Presence of starch in the flesh of the fruits: checked by treating a cross-section of the fruit with an iodine/potassium iodide solution.

The values obtained from these criteria are not universally valid; for a given variety they vary from one region to another and it is for the grower to decide on his own criteria for picking, on the basis of experience.

Determination of the optimum harvest time is more important for early varieties (for example, Coscia) than for late varieties.

The fixing of the time of harvesting has greater importance for controlled-atmosphere storage than for storage in air.

3.2 Characteristics for storage

Fruit put into store should be of quality "extra" and "I", the characteristics of which are defined in AGRI/WP.1/EUR.STAN.1.

Fruit put into cold store should be sound, free from bruises or physiological disorders, and free from any visible sign of fungal or bacterial attack. It should be clean and free from any trace of water in the liquid state.