
International Standard



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Fresh fruits and vegetables — Sampling

Fruits et légumes en l'état — Échantillonnage

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

It was submitted directly to the ISO Council, in accordance with clause 5.10.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 874-1968, which had been approved by the member bodies of the following countries :

Australia	Iran	Romania
Bulgaria	Ireland	South Africa, Rep. of
Colombia	Israel	Thailand
Czechoslovakia	Korea, Rep. of	Turkey
Egypt, Arab Rep. of	Netherlands	United Kingdom
France	New Zealand	USSR
Greece	Norway	Yugoslavia
Hungary	Poland	
India	Portugal	

No member body had expressed disapproval of the document.

Fresh fruits and vegetables — Sampling

0 Introduction

Correct sampling is a difficult process that requires most careful attention. Emphasis cannot therefore be too strongly laid on the necessity of obtaining a properly representative sample of fruits and vegetables. Careless or inaccurate sampling could lead to misunderstanding and unwarranted financial adjustments.

The procedures given in this International Standard are recognized as good practice, and it is strongly recommended that they be followed whenever practicable. It is recognized that it is difficult to lay down fixed rules to be followed in every case, and particular circumstances may render some modification of the method desirable.

The method specified is intended primarily for use in case of dispute between the contracting parties.

1 Scope and field of application

This International Standard specifies a method of sampling fresh fruits and vegetables, forming the subject of international trade, with a view to determining the quality or particular characteristics of the goods.

2 Definitions

2.1 consignment : The quantity of goods dispatched or received at one time and covered by a particular contract or shipping document. It may be composed of one or more lots.

2.2 lot : A stated quantity presumed to be of uniform characteristics (same variety, same degree of maturity, same kind of packaging, etc.), taken from the consignment, and allowing the quality of the consignment to be assessed.

2.3 increment : A small quantity of goods taken from a single position in the lot.

A series of increments, of approximately equal size, should be taken from different positions in the lot.

2.4 bulk sample : The quantity of goods obtained by combining and, if the product is suitable, mixing the increments taken from a specific lot.

2.5 reduced sample : A quantity obtained by reduction, if necessary, of the bulk sample, and which is representative of the lot.

2.6 laboratory sample : The quantity of goods taken from the bulk sample or the reduced sample and intended for analysis or other examination.

3 General

3.1 Sampling may be carried out for routine examination of the product on the spot, or for laboratory tests of special characteristics. In both cases, samples shall be taken at random. However, in some cases, for example, for ascertaining the presence of a different variety or of a disorder of any kind, selective sampling shall be carried out. Sampling cannot then be carried out at random. Hence, before sampling is commenced, its purpose should be defined, i.e. the characteristics to be tested should be specified.

3.2 Sampling shall be carried out in such a way that the increments represent all the characteristics of the lot. After isolation of damaged portions of the lot (cases, bags, etc.), separate samples shall be taken from the sound and from the damaged portions.

3.3 A report shall be prepared when sampling is complete (see clause 6).

4 Method of sampling

4.1 Preparation of the lot for sampling

The lot shall be prepared for sampling in such a way that samples can be taken without hindrance or delay. The samples shall be taken by the interested parties or by a representative authority.

Each lot shall be sampled separately, but if the lot shows damage due to transport, the damaged portions of the lot (cases, bags, etc.), shall be isolated and sampled separately from the sound portions. Similarly, if the consignment is not considered by the consignee to be uniform, even if the consignor has not indicated this, it shall be divided into uniform lots and each lot shall be sampled, by agreement between buyer and seller, unless they have decided otherwise.

4.2 Increments

Increments shall be taken at random from different places and from different levels in the lot.

4.2.1 Packaged products

In the case of packaged products (wooden packages, cardboard packages, bags, etc.), the samples shall be taken at random in accordance with table 1.

Table 1 — Number of packages to be taken

Number of similar packages in the lot	Number of packages to be taken, each constituting an increment
Up to 100	5
101 to 300	7
301 to 500	9
501 to 1 000	10
Over 1 000	15 (min.)

4.2.2 Products in bulk

At least five increments shall be taken from each lot, corresponding to a total mass or a total number of bundles as given in table 2.

Table 2 — Size of increments

Mass of lot (in kilograms) or total number of bundles in lot	Total mass of increments (in kilograms) or total number of bundles to be taken
Up to 200	10
201 to 500	20
501 to 1 000	30
1 001 to 5 000	60
Over 5 000	100 (min.)

In the case of large fruits and vegetables (over 2 kg per unit) the increments shall consist of at least five units.

4.3 Preparation of bulk sample or reduced sample

The bulk sample is formed, if required, by assembling and, if possible, mixing the increments. The reduced sample, if required, is obtained by reduction of the bulk sample.

On-the-spot examination is carried out on the bulk sample or the reduced sample and this shall be carried out as quickly as possible after sampling in order to avoid any change in the characteristics to be examined.

4.4 Size of laboratory samples

The size of the laboratory samples depends on the laboratory tests to be carried out, which shall be indicated in the contract. Minimum quantities are given in table 3.

Table 3 — Size of laboratory samples

Product	Size of laboratory sample
Small fruits, medlars, walnuts, hazelnuts, almonds, chestnuts, and vegetables other than those listed below	1 kg
Cherries, morello cherries, plums	2 kg
Apricots, bananas, quinces, citrus fruits, peaches, apples, pears, grapes, avocados, garlic, aubergines, beetroots, cucumbers, turnips, cabbages, root vegetables, onions, paprika, radishes, tomatoes	3 kg
Pumpkins, melons, water-melons, pineapples	5 units
Cabbages, cauliflowers, red cabbages, lettuces	10 heads
Sweet corn	10 cobs
Vegetables in bundles	10 bundles

5 Packaging and handling of laboratory samples

5.1 Packaging

Laboratory samples which are not examined on the spot shall be well packed, to ensure that they will keep well.

The containers of the laboratory samples shall be sealed.

5.2 Marking

Samples which are to be dispatched shall be marked (labelled) so that they cannot be interchanged. The marking shall be legible and permanent, and shall include the following information :

- a) designation of the product, species and possibly variety, indication of quality grading;
- b) name of consignor;
- c) place of sampling;
- d) date and, for perishable products, time of sampling;
- e) identification mark of the lot and of the sample (dispatch note, number of vehicle, place of storage);
- f) number of sampling report;
- g) name and signature of sampler;
- h) if required, list of laboratory tests to be carried out.

5.3 Dispatch and storage

When constituted, the laboratory sample shall be dispatched as soon as possible to its destination, and the transport shall also be as rapid as possible.

Storage and transport of the laboratory sample shall be carried out in conditions such as to avoid any change in the product; it is therefore desirable that examination be carried out as quickly as possible after sampling.

6 Sampling report

The sampling report, numbered and accompanied by a laboratory sample, shall include the following information, as appropriate :

- a) designation of the product, species and, if necessary, variety and quality grading;
- b) consignee of the lot;
- c) place and date of dispatch and of receipt;
- d) name and address of the consignor;
- e) place, duration and conditions of storage of the lot and indication of the means of transport (description, number of vehicle);
- f) day and time when sampling was requested;
- g) day and time of sampling;
- h) atmospheric conditions during sampling (temperature, etc.);
- j) size of the lot, or number of packages;
- k) mark enabling the lot to be identified with the sample (kind of package, text of the label, etc.);
- m) purpose of sampling, and indication of the time limit between sampling and examination for quality under normal conditions;
- n) description of the condition of the means of transport or of the store (cleanliness, foreign odour, and, for the means of transport, mechanical conditions, weather-proofness, etc.);
- p) apparent uniformity of the lot, proportion of damp or otherwise damaged goods;
- q) cleanliness of the lot;
- r) type and quality of the package and disposition of the product in the package;
- s) internal temperature of the goods (or temperature of the means of transport or of the store);
- t) quantity of ice (or of solid carbon dioxide) and mechanical condition of fans in refrigerated means of transport;
- u) condition and quality of winter packaging;
- v) tare of the packages in the lot;
- w) names and forenames of interested parties present during sampling;
- x) number of laboratory samples prepared;
- y) name(s) and forename(s) of the sampler or samplers.

The report shall also mention the technique applied, if this was other than that specified in this International Standard.

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