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Carob — Specification

Caroube — Spécifications

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Foreword

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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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7907 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Carob — Specification

1 Scope and field of application

This International Standard specifies requirements for carob, obtained from the carob tree (*Ceratonia siliqua* Linnaeus) for human consumption or forage, or for industrial use.

NOTE — Carobs broken into pieces for industrial use, and seeded carobs, lie outside the scope of this International Standard.

2 Definitions

For the purpose of this International Standard, the following definitions apply.

2.1 pest-infested carobs : Pods damaged by insect infestation and/or mites.

2.2 rodent-damaged carobs : Pods damaged by rodents.

2.3 spoiled carobs : Rotten, mouldy, sun-scalded, overly shrivelled and dried and stained pods.

Light discoloration on some parts of the fruit and especially near the stem does not count as a defect.

2.4 broken carobs : Incomplete pods of length greater than 3 cm of which parts are absent or separated.

Carobs of which small parts near the stem are missing do not count as broken fruit.

2.5 undeveloped carobs : Pods longer than 3 cm but smaller than 5 cm, which are shrivelled and mis-shapen.

3 Description

Carobs are the ripe, dry pods of *Ceratonia siliqua* Linnaeus. The fruits of the carob tree (pods) shall be sound, clean and well developed and dried. They shall have the characteristic shape and shall be at least 5 cm long.

4 Requirements

NOTE — Carobs are not graded.

4.1 Odour and taste

Carobs shall have an odour and taste characteristic of the fruit. They shall be free from foreign odour and taste, particularly rancidity.

4.2 Freedom from living insects and other pests

Carobs shall be free from living insects and/or any other living animal pest.

4.3 Spoiled carobs

The proportion of spoiled carobs, including pest-infested and rodent-damaged fruits, shall not exceed the value given in the table.

4.4 Broken carobs

The proportion of broken carobs shall not exceed the value given in the table.

4.5 Undeveloped carobs

The proportion of undeveloped carobs shall not exceed the value given in the table.

4.6 Extraneous matter

The proportion of extraneous matter such as dirt, stones, stem, leaf and other foreign matter shall not exceed the value given in the table.

Whole pods or broken pods smaller than 3 cm are counted as extraneous matter.

4.7 Moisture content

The moisture content of carobs shall not exceed 12 % (*m/m*).

Table — Requirements for carobs

Characteristic	Requirement
Spoiled carobs other than mouldy and rotten carobs, but including pest-infected and rodent-damaged fruits, % (<i>m/m</i>) max.	9,5
Mouldy and rotten carobs, % (<i>m/m</i>) max.	0,5
Broken carobs, % (<i>m/m</i>) max.	25,0
Undeveloped carobs, % (<i>m/m</i>) max.	3,0
Extraneous matter, % (<i>m/m</i>) max.	1,0

5 Sampling

Methods of sampling dry and dried fruits and vegetable products will form the subject of a future International Standard.

6 Methods of test

Samples of carobs shall be tested for conformity of the product to the requirements of the table by the method of test specified in annex A. The moisture content (4.7) shall be determined in accordance with annex B.

7 Packing and marking

7.1 Packing

Carobs may be dispatched in packages or without packages (in bulk).

The packages shall be clean and sound bags or other type of containers made of a material which does not affect the product. In any case the mass of the containers shall not be more than 50 kg.

In bulk carriage, the wagons, lorries, trucks or holds of ships loaded with carob shall be clean and free from foreign matter and foreign odours which may affect the product.

7.2 Marking

The bag or container shall be marked with the following particulars, or in bulk carriage these particulars shall be written or printed on a suitable label placed in a visible position on the bulk :

- a) name of the product, and the trade mark or brand name, if any;
- b) name and address of the producer or packer;
- c) batch or code number;
- d) net mass or gross mass (according to the request of the importing country);
- e) producing country;
- f) any other marking required by the purchaser, such as the year of harvest and date of packing (if known);
- g) possibly, a reference to this International Standard.

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Annex A

Determination of spoiled carobs, broken carobs, undeveloped carobs and extraneous matter

(This annex forms part of the standard.)

A.1 Principle

Visual inspection of a test portion of carobs and physical separation of spoiled carobs, broken carobs, undeveloped carobs and extraneous matter.

A.2 Procedure

Weigh, to the nearest 0,1 g, a test portion of about 500 g. Separate the spoiled carobs, broken carobs, undeveloped carobs and extraneous matter carefully by hand or using tweezers. Separate mouldy and rotten pods from the other kinds of spoiled carobs.

Weigh each category separately to the nearest 0,1 g.

A.3 Expression of results

The content, expressed as a percentage by mass, of each category is equal to

$$\frac{m_1}{m_0} \times 100$$

where

m_0 is the mass, in grams, of the test portion;

m_1 is the mass, in grams, of the relevant category (see clause A.2).

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Annex B

Determination of moisture content (Routine method)

(This annex forms part of the standard.)

B.1 Definition

moisture content of carob : Conventionally, the loss in mass determined under the operating conditions specified in this annex.

B.2 Principle

Heating and drying of a test portion of carobs at a temperature of 103 ± 2 °C. Weighing, and determination of the loss in mass.

B.3 Apparatus

Usual laboratory equipment and in particular :

B.3.1 Electric oven, having effective ventilation and capable of being maintained at 103 ± 2 °C.

B.3.2 Dish with lid, of corrosion-resistant metal or of glass, with at least 50 cm² effective surface (for example minimum diameter 80 mm) and 35 to 40 mm deep.

B.3.3 Mortar and pestle, which permit the pods to be crushed without heating.

B.3.4 Desiccator, containing an effective desiccant.

B.4 Procedure

B.4.1 Preparation of test sample

Take approximately 100 g of carobs from the laboratory sample and crush them in a mortar (B.3.3) for 2 min, so that the greatest dimension of the particles does not exceed about 10 mm, while avoiding the formation of a paste.

B.4.2 Preparation of the dish and lid

Dry the dish and lid for 2 h in the oven maintained at 103 ± 2 °C. Leave to cool in the desiccator and weigh to the nearest 0,01 g.

B.4.3 Test portion

Quickly place a test portion comprising approximately half of the test sample (B.4.1) in the dish (B.4.2). Cover the dish with its lid and weigh to the nearest 0,01 g.

B.4.4 Determination

Place the dish containing the test portion (B.4.3) in the oven (B.3.1) at 103 ± 2 °C, on its lid. Keep it there for 6 h. Do not open the oven during this period. At the end of this period, remove the dish, cover it immediately with its lid and place it in the desiccator (B.3.4). After cooling to ambient temperature (approximately 40 to 60 min after placing in the desiccator), weigh it, still covered, to the nearest 0,01 g.

B.4.5 Number of determinations

Carry out two determinations.

B.5 Note on procedure

The crushing and weighing operations for each determination shall be carried out as rapidly as possible, and in any event within 5 min.

B.6 Expression of results

The moisture content, expressed as a percentage by mass, is equal to

$$\frac{m_3 - m_4}{m_3 - m_2} \times 100$$

where

m_2 is the mass, in grams, of the empty dish and its lid;

m_3 is the mass, in grams, of the dish and its lid with the test portion before oven drying;

m_4 is the mass, in grams, of the dish and its lid with the test portion after oven drying.

Take as the result the arithmetic mean of the two determinations; give the result to one decimal place.

B.7 Test report

The test report shall show the method used and the results obtained. It shall also mention any operating details not specified in this annex, or regarded as optional, together with details of any incidents likely to have influenced the results.

The test report shall include all the information necessary for the complete identification of the sample.