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Dried mulberries — Specification

Mûres blanches séchées — Spécifications

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Foreword

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International Standard ISO 7910 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Annexes A, B and C form an integral part of this International Standard.

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Dried mulberries — Specification

1 Scope

This International Standard specifies requirements for dried mulberries, obtained from seedless fruits of the mulberry tree, *Morus alba* Linnaeus (White Mulberry), for human consumption.

2 Definitions

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

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2.1 pest-infested dried mulberries: Berries damaged by insect and/or mite infestation.

2.2 spoiled dried mulberries: Crushed, rotten or mouldy berries.

2.3 broken dried mulberries: Incomplete berries of which some parts (less than half of the berry) are missing.

2.4 pieces of dried mulberries: Broken pieces smaller than half of a berry.

2.5 lumped dried mulberries: Berries stuck together in a roundish lump which cannot be separated easily.

2.6 brownish dried mulberries: Sun-dried berries, the colour of which has turned brown due to the drying method and climatic conditions.

2.7 moisture content of dried mulberries: Conventionally, the loss in mass determined under the operating conditions specified in annex C.

3 Description

Dried sweet mulberries are the tree-ripened and sun-dried or artificially dried seedless fruits of the cultivars of *Morus alba* Linnaeus which produce parthenocarpic fruits suitable for eating fresh. They shall be sound, clean and have a pliable texture.

4 Requirements

4.1 Grading

Dried mulberries may be graded on the basis of colour, percentage of broken fruits, fruit pieces, lumped fruits and the presence of defects and extraneous matter as shown in table 1.

4.2 Odour and taste

The odour and taste of the dried mulberries shall be characteristic of the fruits. The fruits shall be free from foreign odour and taste.

4.3 Freedom from moulds, insects, etc.

The dried mulberries shall be free from moulds and living insects and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision) or with such magnification as may be necessary in any particular case. If the magnification exceeds × 10, this fact shall be stated in the test report.

4.4 Extraneous matter

The proportion of extraneous matter such as dust, dirt, pieces of stem or leaf or any other foreign matter adhering to the berries or among the berries shall not exceed the value given in table 1 for the relevant grade.

4.5 Colour

The colour of the dried mulberries shall be creamy white to light brown. The minimum proportion of berries of a colour appropriate to the grade is given in table 1.

Table 1 — Requirements according to grade

Grade	Colour % (m/m), min.	Broken berries % (m/m), max.	Pieces of berries % (m/m), max.	Lumped berries % (m/m), max.	Pest-infested and spoiled berries % (m/m), max.	Extraneous matter % (m/m), max.
I	80 creamy white	10	10	2	1	0,25
II	80 light brown	15	15	4	2	0,50

4.6 Other requirements

The proportions of broken berries, pieces of berries, lumped berries, pest-infested berries and spoiled berries shall not exceed the value given in table 1 for the relevant grade.

4.7 Moisture content

The moisture content of dried mulberries shall not exceed 6 % (m/m) for each grade.

5 Test methods

Samples of dried mulberries shall be tested for conformity of the product to the requirements of this International Standard using the test methods specified in annex A, annex B and annex C.

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6 Packing and marking

6.1 Packing

Dried mulberries shall be packed in clean, sound containers made of a material which does not affect the product. If wooden boxes are used, the insides shall be covered with a suitable paper. If packed for direct consumption, small consumer packages shall be used. The quantities packed in such packages are usually of 0,25 kg, 0,5 kg or 1,0 kg net mass, but may be of any other net mass if required.

A suitable number of such packages shall be placed in large wooden or cardboard cases. The size of the cases and the number of packages packed in each case shall be agreed between the purchaser and the supplier, but the mass of the cases shall not exceed 10 kg.

6.2 Marking

The following particulars shall be marked or labelled on each container or case:

a) name of the product, and the trade-mark or brand-name, if any;

b) name and address of the manufacturer or packer;

c) batch or code number;

d) net mass (or gross mass), at the request of the importing country;

e) grade of the product (if graded);

f) producing country;

g) any other marking required by the purchaser, such as the year of harvest and date of packing (if known);

h) possible reference to this International Standard.

Annex A
(normative)

Determination of different coloured berries

A.1 Principle

Visual inspection of a test portion of dried mulberries and physical separation of the different coloured berries.

A.2 Procedure

Weigh, to the nearest 0,1 g, a test portion of about 200 g and spread it out on a clean white surface. Separate carefully the creamy white or light-brown berries, according to the category, from the brownish coloured berries by hand or by using tweezers.

Weigh, to the nearest 0,1 g, the group(s) of different coloured dried mulberries.

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A.3 Expression of results

The content, expressed as a percentage by mass, of creamy white or light-brown coloured dried mulberries 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 creamy white or light-brown coloured berries.

The content, expressed as a percentage by mass, of different coloured berries is equal to

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

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Annex B
(normative)

Determination of pest-infested and spoiled berries, broken berries, pieces of berries, lumped berries and extraneous matter

B.1 Principle

Visual inspection of a test portion of dried mulberries and physical separation of pest-infested and spoiled berries, broken berries, pieces of berries, lumped berries and extraneous matter.

B.2 Procedure

Weigh, to the nearest 0,01 g, a test portion of about 500 g. Separate carefully the pest-infested and spoiled berries, broken berries, pieces of berries, lumped berries and extraneous matter by hand or by using tweezers.

Weigh, to the nearest 0,01 g, each of the categories separately.

B.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 (i.e. pest-infected and spoiled berries, broken berries, pieces of berries, lumped berries, or extraneous matter).

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Annex C
(normative)

Determination of moisture content

C.1 Principle

Heating and drying of a test portion of dried mulberries at a temperature of 70 °C ± 1 °C under a pressure not exceeding 13,3 kPa.

C.2 Apparatus

Usual laboratory apparatus and, in particular, the following.

C.2.1 Electric oven, capable of operating at 70 °C ± 1 °C at a pressure of 13,3 kPa.

C.2.2 Dish with a well-fitting lid, made of corrosion-resistant metal, of about 85 mm diameter.

C.2.3 Mincer, either hand or mechanically driven, made of material which does not absorb moisture.

C.2.4 Desiccator, containing an effective desiccant.

C.2.5 Steam-bath.

C.2.6 Analytical balance.

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C.3 Preparation of the test sample

Take approximately 50 g of dried mulberries and pass them twice through a mincer (C.2.3).

C.4 Procedure

C.4.1 Test portion

Weigh, to the nearest 0,01 g, about 5 g of the test sample (clause C.3). Ensure that the dish and lid (C.2.2) are dry. Put about 2 g of dry sand, previously washed in acid and rinsed using distilled water, into the dish. Tare the dish with its lid and contents. Spread the weighed test portion as evenly as possible over the bottom of the dish containing the sand.

C.4.2 Determination

Moisten the test portion and the sand thoroughly with a few millilitres of hot water. Mix the test portion and sand with a spatula. Wash the spatula with hot water to clean the sample residues from it into the dish. Heat the open dish on a steam-bath (C.2.5) to evaporate the water to dryness. Then put the dish, with the lid alongside, in the oven (C.2.1) and continue drying for 6 h at 70 °C ± 1 °C under a pressure not exceeding 13,3 kPa. Do not open the oven during this period. During drying admit to the oven a slow current of air which has been dried by passing it through sulfuric acid (about two bubbles per second). The metal dish shall be in direct contact with the metal shelf of the oven. After drying, remove the dish, cover it immediately with its lid and place it in the desiccator (C.2.4). After cooling to ambient temperature, weigh it, still covered, to the nearest 0,01 g.

Disregard any temporary drop in oven temperature owing to rapid evaporation of water during the early part of the drying period.

C.4.3 Number of determinations

Carry out two determinations on the same test sample.

C.5 Expression of results

C.5.1 Calculation

The moisture content, expressed as a percentage by mass, of the test portion is equal to

$$\frac{m_1 - m_2}{m_1 - m_0} \times 100$$

where

m_0 is the mass, in grams, of the empty dish with its lid and the sand;

m_1 is the mass, in grams, of the dish, its lid, the sand and the test portion before oven drying;

m_2 is the mass, in grams, of the dish, its lid, the sand and the test portion after oven drying.

Take as the result the arithmetic mean of the two determinations, expressed to one decimal place.

C.5.2 Repeatability

The difference between the results of two determinations, carried out in rapid succession (or simultaneously) by the same analyst using the same apparatus on the same test sample, shall not be greater than 0,1 g of moisture per 100 g of sample.

C.6 Test report

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

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

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