INTERNATIONAL STANDARD

ISO 8024

First edition
2023-10

Concentrated black mulberry juice — Specifications

Reference number
ISO 8024:2023(E)

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Published in Switzerland

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Foreword

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 3, *Fruits and vegetables and their derived products*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Mulberry is a flowering tree species belonging to the Moraceae family and is native to southwest Asia. Planting this tree in its native habitat has such a long history that it is difficult to pinpoint the natural range of its different species. In the genus *Morus* (*nigra*), the mulberry tree is the smallest, and its height can reach about 9 m; if left untreated, it will remain a shrub at a young age. This tree has a long life and has sometimes been known to bear fruit for several hundred years.

The presence of many nutrients and the synergistic role of these nutrients on each other has made this fruit a good source to meet the daily needs of various micronutrients. Mulberry is one of the best fruits in terms of antioxidant activity, since it has strong phytochemicals such as anthocyanins[3].

Concentrated black mulberry juice — Specifications

1 Scope

This document specifies the characteristics, sampling, packaging and marking of concentrated mulberry juice.

This document is applicable to concentrated black mulberry juice that is physically processed and packaged for human consumption.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 750, *Fruit and vegetable products — Determination of titratable acidity*

ISO 2173, *Fruit and vegetable products — Determination of soluble solids — Refractometric method*

ISO 2448, *Fruit and vegetable products — Determination of ethanol content*

ISO 5516, *Fruits, vegetables and derived products — Decomposition of organic matter prior to analysis — Ashing method*

ISO 5522, *Fruits, vegetables and derived products — Determination of total sulphur dioxide content*

ISO 6633, *Fruits, vegetables and derived products — Determination of lead content — Flameless atomic absorption spectrometric method*

CODEX CXS 1-1985, *General Standard for the Labelling of Pre-Packaged Foods*

CODEX CXS 193-1995, *General Standard for Contaminants and Toxins in Food and Feed*

CODEX CXS 247-2005, *General Standard for Fruit Juices and Nectars*

CODEX CXS 1-1969, *General Principles of Food Hygiene*

Codex Pesticides Residues in Food Online Database, Available at: https://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/en/

EN 1133:1994, *Fruit and vegetable juice- Determination of the Formol Number of fruit and vegetable juices and related products*

EN 12630, *Fruit and vegetable juices — Determination of glucose, fructose, sorbitol and sucrose contents — Method using high performance liquid chromatography*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 General

4.1 Concentrated black mulberry juice

Concentrated black mulberry juice is an unfermented product which is capable of fermentation after regeneration and is preserved exclusively by physical methods.

The mulberry water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50 % greater than the Brix value established for reconstituted juice from the same fruit (in accordance with CODEX CXS 247)

4.2 Physical and chemical specifications

4.2.1 Physical and chemical properties

The physical and chemical properties of concentrated black mulberry juice shall be in accordance with Table 1.

Table 1 — Physical and chemical properties

Specification	Acceptable range	Unit	Method
Brix	Min. 22	g/100 g	ISO 2173
Ash	0,15 to 0,75	g/100 ml	ISO 5516
Titratable acidity at pH 8,1	Min. 3	g/100 ml	ISO 750
pH	2 to 4	—	ISO 1842
Invert sugar	Min. 7	g/100 ml	EN 12630
Ethanol	Max. 3	g/l	ISO 2448
Formol number	Min. 12	g/100 ml	EN 1133:1994
Sucrose	Max. 1	g/100 ml	EN 12630
SO_2	Max. 10	mg/kg	ISO 5522
Foreign materials	Absence	_	_
Sensorial test			
Appearance	Liquid	_	_
Taste	Slightly sour	_	_
Colour	Dark red	_	_
NOTE All parameters are calculated based on the rate of soluble solids of ripe fruit: 11 g/100 g.			

4.2.2 Heavy metals

The acceptable range of heavy metals in concentrated black mulberry juice shall be in accordance with CODEX CXS 193-1995. The test method for lead shall be in accordance with ISO 6633.

4.2.3 Pesticide residues

Concentrated mulberry juice shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity (https://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/pesticides/en/).

5 Packaging

The products shall be packaged in clean food grade packaging material that is protected of contaminants. The packaging materials and process shall not contaminate the product nor affect its technological, nutritional or sensorial quality.

The labelling of pre-packaged foods shall be in accordance with the requirements of CODEX CXS 1-1985.

In addition, the following particulars shall be marked or labelled on each container and case:

a) name of the material, and the trademark or brand name, if any;

b) name and address of the manufacturer or packer;

c) batch or code number;

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

e) producers;

f) expiry date;

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