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Technical Standard of International Seabuckthorn Association

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沙棘果油 (Seabuckthorn fruit oil)

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前言

Preface

本标准按照 GB/T 1.1—2020《标准化工作导则 第一部分：标准结构和编写》的规则起草。

本标准由国际沙棘协会归口。

本标准起草单位：水利部沙棘开发管理中心（水利部水土保持植物开发管理中心）、河北神兴沙棘研究院、高原圣果沙棘制品有限公司、黑龙江圣宝泰农业有限公司、北京宝得瑞健康产业有限公司、内蒙古宇航人高技术产业有限责任公司、吕梁野山坡食品有限责任公司。

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This standard is drafted in accordance with the rules of GB/T 1.1 -- 2020 guidelines for Standardization Work Part I: Standard structure and Preparation.

This standard is under the auspices of the International Sea buckthorn Association.

This standard drafting unit: Management Center for Seabuckthorn Development, Ministry of Water Resources (Management Center for Soil and Water Conservation Plant Development, Ministry of Water Resources), Hebei Shengxing Seabuckthorn Institute, Gaoyuanshengguo Seabuckthorn Products Co., Ltd., Heilongjiang Shengbaotai Agricultural Co., Ltd., Beijing Powdery Health Industry Co., Ltd., Inner Mongolia Yuhangren High-tech. Industry Co., Ltd., Luliang Yeshanpo Food Co., Ltd.

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沙棘果油

Seabuckthorn fruit oil

1 范围

本标准规定了沙棘果油的术语和定义、技术要求、生产加工过程中卫生要求、质量要求、食品添加剂、检验方法及规则、标签标识、包装、运输和贮存。

本标准适用于以沙棘(*Hippophae L.*)果实(鲜果、干果)为原料加工而成的油脂。

1. Scope

This standard specifies the terms and definitions, technical requirements, hygienic requirements during production and processing, quality requirements, food additives, inspection methods and rules, labeling, packaging, transportation and storage of seabuckthorn fruit oil.

This standard is applicable to oils and fats processed from *Hippophae L.* fruits (fresh and dried).

2.规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件,仅所注日期的版本适用本文件。凡是不注日期的引用文件,其最新版本(包括所有修改单)适用于本文件。

GB/T 191 包装储运图示标志

GB 2716 食品安全国家标准 植物油

GB 2762 食品安全国家标准 食品中污染物限量

GB 2763 食品安全国家标准 食品中农药最大残留限量

GB 5009.11 食品安全国家标准 食品中总砷及无机砷的测定

GB 5009.12 食品安全国家标准 食品中铅的测定

GB 5009.22 食品安全国家标准 食品中黄曲霉毒素B族和G族的测定

GB 5009.27 食品安全国家标准 食品中苯并(a)芘的测定

GB 5009.37 食用植物油卫生标准的分析方法

GB 5009.82 食品安全国家标准 食品中维生素A、D、E的测定

GB 5009.83 食品安全国家标准 食品中胡萝卜素的测定

GB 5009.168 食品安全国家标准 食品中脂肪酸的测定

GB 5009.227 食品安全国家标准 食品中过氧化值的测定

GB 5009.229 食品安全国家标准 食品中酸价的测定

GB 5009.236 食品安全国家标准 动植物油脂水分及挥发物的测定

GB 5009.262 食品安全国家标准 食品中溶剂残留量的测定

GB/T 5524 植物油脂检验 扦样、分样法

GB/T 5525 植物油脂透明度、气味、滋味鉴定法

GB/T 5527 植物油脂检验 折光指数测定法

GB/T 5532 动植物油脂 碘值的测定

GB/T 5534 动植物油脂皂化值的测定

GB 7718 食品安全国家标准 预包装食品标签通则

GB/T 15688 动植物油脂不溶性杂质含量的测定

GB/T 17374 食用植物油销售包装

GB 28050 食品安全国家标准 预包装食品营养标签通则

JJF 1070 定量包装商品净含量计量检验规则

国家质量监督检验检疫总局第 75 号令（2005）定量包装商品计量监督管理办法

2. Cited Normative reference documents

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest version (including all amendments) of this document applies.

- GB/T 191 Packaging, storage and transportation pictorial logo
- GB 2716 National standard for food safety: Vegetable oil
- GB 2762 National Standard for Food Safety: Limits of contaminants in food
- GB 2763 National Standard for food safety: Maximum residue limit of pesticide in food
- GB 5009.11 National standard for food safety: Determination of total arsenic and inorganic arsenic in food
- GB 5009.12 National Standard for Food Safety: Determination of lead in food
- GB 5009.22 National Standard for Food Safety: Determination of Aflatoxin groups B and G in food
- GB 5009.27 National Standard for Food Safety: Determination of benzo (a) pyrene in food
- GB 5009.37 Hygienic standard for edible vegetable oil: Method for analysis
- GB 5009.82 National Standard for Food Safety: Determination of vitamins A, D and E in food
- GB 5009.83 National Standard for Food safety: Determination of carotene in food
- GB 5009.168 National standard for food safety: Determination of fatty acids in food
- GB 5009.227 National standard for food safety: Determination of peroxide value in food
- GB 5009.229 National standard for food safety: Determination of acid value in food
- GB 5009.236 National standard for food safety: Determination of moisture and volatiles in animal and vegetable fats
- GB 5009.262 National standard for food Safety: Determination of residual solvent in food
- GB/T 5524 Inspection of vegetable oils by means of sampling and sampling
- GB/T 5525 Method for identification of transparency, odor and taste of vegetable oils
- GB/T 5527 Vegetable oils -- determination of refractive index
- GB/T 5532 Determination of iodine value of animal and vegetable fats
- GB/T 5534 Determination of saponification value of animal and vegetable fats
- GB 7718 National Standard for Food Safety: General rules for labeling pre-packaged food
- GB/T 15688 Determination of insoluble impurities in animal and vegetable fats
- GB/T 17374 Edible vegetable oil sales package
- GB 28050 National Standard for Food safety: General rules for nutrition label of prepackaged food
- JJF 1070 Rules for metrological inspection of net content of quantified packaged goods
- General Administration of Quality Supervision, Inspection and Quarantine Order No.75 (2005) : Measures for metrological supervision and administration of Quantitative Packaged Commodities

3 术语和定义

3 Terms and definitions

3.1沙棘全果油 Seabuckthorn fruit oil

从沙棘全果中提取的油脂总和（以沙棘全果为原料，经粉碎用物理压榨法、普通溶剂浸出法、超临界或亚临界萃取所得的油脂）。

Total oil extracted from seabuckthorn whole fruit (oil extracted from seabuckthorn whole fruit by crushing physical pressing method, ordinary solvent leaching method, supercritical or sub-supercritical extraction).

3.2 沙棘果汁油 Seabuckthorn juice oil

从沙棘果汁中提取的油脂（从沙棘果汁直接物理分离或经生物发酵后物理分离所得到的油脂）。

Oil extracted from sea-buckthorn juice (oil obtained from direct physical separation of sea-buckthorn juice or physical separation after biological fermentation).

3.3沙棘果渣油 Seabuckthorn residue oil

从沙棘果渣中提取的油脂（以沙棘榨汁后的果渣为原料，用压榨法、溶剂浸出、超临界或亚临界萃取所得的油脂）。

Oil extracted from sea-buckthorn pomace (oil extracted from sea-buckthorn residue after juicing by pressing, solvent leaching, supercritical or subcritical extraction).

4 分类

4 Classification

沙棘果油分为沙棘全果油、沙棘果汁油和沙棘果渣油。

Sea buckthorn fruit oil can be divided into whole sea buckthorn fruit oil, sea buckthorn juice oil and sea buckthorn residue oil.

5 要求

5 Requirements

5.1原料要求

5.1 Raw material requirements

沙棘果完好无损，无腐烂、无杂质。

Seabuckthorn fruit intact, no decay, no impurities.

5.2特征指标

5.2 Feature specifications

沙棘果油特征指标应符合表 1 的规定。

The characteristic indexes of seabuckthorn fruit oil should conform to the provisions of Table 1.

表1 特征指标

Table 1 Characteristic indexes

特 征	指 标		
	沙棘全果油 Sea buckthorn whole fruit oil	沙棘果汁油 Sea buckthorn whole fruit oil	沙棘果渣油 Sea buckthorn whole fruit oil

折光指数 n ²⁰ Refractive index	1.4600~1.4800		
碘值(I)(g/100g) Iodine value	50~110	70~100	30~70
维生素E (mg/100g) Vitamin E≥	70	100	250
皂化值 (mg KOH/g) Saponification value	130~200	130~200	130~200
不皂化物(%) Unsaponifiable ≥	1	1	10
主要脂肪酸组成/(%) Main fatty acid composition			
棕榈酸 (C16:0) Palmitic acid	30.0~40.0	25.0~35.0	25.0~35.0
棕榈油酸(C16:1) Palmitoleic acid ≥	30.0	28.0	25.0
硬脂酸(C18:0) Stearic acid	0.5~2.0	0.5~2.0	0.5~2.0
油酸 (C18:1n9) Oleic acid	5.0~18.0	20.0~30.0	28.0~30.0
亚油酸(C18:2n6) Linoleic acid	10.0~20.0	2.0~15.0	7.0~10.0
亚麻酸 (C18:3n3) Linolenic acid	2.0~5.0	1.0~2.0	2.0~3.0

5.3 质量指标

5.3 Quality indicators

5.3.1 感官指标见表 2

5.3.1 Sensory indicators are shown in Table 2

沙棘果油感官指标应符合表 2 的规定。

The sensory indexes of seabuckthorn fruit oil should meet the requirements in Table 2.

表 2 感官指标
Table 2 Sensory indicators

指标名称 Indicator name Indicator	指 标		
	沙棘全果油 Seabuckthorn whole fruit oil	沙棘果汁油 Sea buckthorn juice oil	沙棘果渣油 Seabuckthorn residue oil
外观 Appreances	澄清、透明液体，随温度降低时易凝固 Clear and transparent liquid, easy to solidify as temperature decreases	澄清、透明液体，温度降低时易凝固 Clear, transparent liquid, easy to solidify at lower temperature	粘稠状液体，常温下成凝固状态 Viscous liquid, solidified at room temperature
气味及滋味	具有沙棘果油固有的气味、滋味，无异味		

Smell and taste	With seabuckthorn fruit oil inherent smell, taste, no peculiar smell		
透明度 (20°C) Transparency (20°C)	允许微浊或少量析出 Allow a little turbidity or precipitation		
色泽 Colour and lustrance	棕红色、橙红色 Brown red, orange red	棕红色 Palm red	棕黄色 Brown to yellow

5.3.2 理化指标

5.3.2 Physical and chemical indicators

沙棘果油理化指标应符合表 3 的规定。

The physical and chemical indexes of seabuckthorn fruit oil should meet the requirements in Table 3.

表 3 理化指标

Table 3 Physical and chemical indexes

指标名称 The index name	指 标 Refers to the standard		
	一级 G1	二级 G2	三级 G3
酸值(KOH)/(mg/g)≤Acid value(KOH)/(mg/g)≤	3	8	15
过氧化值/(g/100g)≤Peroxide value/(g/100g)≤	0.25		
水分及挥发物/(%)≤Moisture and volatiles/(%)≤	0.20		
不溶性杂质/(%)≤Insoluble impurity/(%)≤	0.15		

5.3.3 污染物限量

沙棘果油污染物向量应符合表 4 的规定。

表 4 污染物限量

Table 4 Pollutant limits

指标名称The index name	指 标Refers to the standard
溶剂残留量/(mg/kg)≤ Residual solvent/(mg/kg) ≤	不得检出, (溶剂法果油≤20) Can not be detected, (solvent method fruit oil ≤20)
总砷 (以As计) /(mg/kg) ≤Total arsenic (As) /(mg/kg) ≤	0.1
铅 (以Pb计) /(mg/kg)≤ Lead(in Pb) /(mg/kg) ≤	0.1
黄曲霉毒素B ₁ /(μg/kg)≤ Aflatoxin B ₁ /(μg/kg) ≤	10
苯并(a)芘/(μg/kg)≤ Benzo (a) pyrene /(μg/kg) ≤	10
农药残留Pesticide residues	按 GB 2763 的规定执行 According to GB 2763

5.3.4 净含量

5.3.4 Net content

净含量应符合国家质量监督检验检疫总局[2005]第 75 号令的规定。

The net content should conform to the provisions of the State General Administration of Quality Supervision, Inspection and Quarantine [2005] Order No. 75.

6 食品添加剂

6 Food additives

不得添加任何食品添加剂。

Do not add any food additives.

7 检验方法

7 Inspection Methods

7.1 透明度

7.1 The transparency

按 GB/T 5525 规定的方法鉴定。

According to the method specified in GB/T 5525.

7.2 气味及滋味

7.2 Smell and taste

按 GB/T 5525 规定的方法鉴定。

According to the method specified in GB/T 5525.

7.3 色泽

7.3 Colour

按 GB 5009.37 规定的方法鉴定。
According to the method specified in GB 5009.37.

7.4 折光指数

7.4 Refractive index

按 GB/T 5527 规定的方法测定。
According to the method specified in GB/T 5527.

7.5 碘值

7.5 Iodine value

按 GB/T 5532 规定的方法测定。
According to the method specified in GB/T 5532.

7.6 维生素E

7.6 Vitamin E

按 GB 5009.82 规定的方法测定。
According to the method specified in GB 5009.82.

7.4 脂肪酸组成

7.4 Composition of Fatty acids

按 GB 5009.168规定的方法测定。
According to the method specified in GB 5009.168.

7.5 水分及挥发物

7.5 Moisture and volatiles

按 GB 5009.236规定的方法测定。
According to the method specified in GB 5009.236.

7.6 不溶性杂质

7.6 Insoluble impurities

按 GB/T 15688 规定的方法测定。
According to the method specified in GB/T 15688.

7.7 酸值

7.7 The acidity

按 GB 5009.229 规定的方法测定。
According to the method specified in GB 5009.229.

7.8 过氧化值

7.8 Peroxide value

按 GB 5009.227 规定的方法测定。
According to GB 5009.227 method of determination.

7.9 皂化值

7.9 Saponification value

按 GB/T 5534规定的方法测定。
According to the method specified in GB/T 5534.

7.10 总砷

7.10 The total arsenic

按 GB 5009.11 规定的方法测定。
According to the method specified in GB 5009.11.

7.11 铅

7.11 Lead

按 GB 5009.12 规定的方法测定。

According to the method specified in GB 5009.12.

7.12 黄曲霉毒素 B₁

7.12 Aflatoxin B₁

按 GB 5009.22 规定的方法测定。

According to the method specified in GB 5009.22.

7.13 溶剂残留量

7.13 Residual solvent

按 GB 5009.262 规定的方法测定。

According to the method of GB 5009.262.

7.14 苯并(a)芘

7.14 Benzo (a) pyrene

按 GB 5009.27 规定的方法测定。

According to the method specified in GB 5009.27.

8 检验规则

8 Inspection rules

8.1 检验分类

8.1 Classification of Inspection

检验分为出厂检验和型式检验两种。

The inspection is divided into factory inspection and type inspection.

8.2 组批与抽样

8.2 Batch and sampling

每批原料所生产的产品为一检验批，抽样方法按照 GB/T 5524 规定的要求执行。

The products produced from each batch of raw materials shall be one inspection lot, and the sampling method shall be in accordance with the requirements specified in GB/T 5524.

8.3 出厂检验

8.3 Delivery inspection

8.3.1 产品出厂前应逐批检验，检验合格后，方可出厂。

8.3.1 The products shall be inspected batch by batch before leaving the factory. Only after passing the inspection can they leave the factory.

8.3.2 按表1、表2、表3 全项进行检测；溶剂浸出的沙棘果油包括溶剂残留量的检测。

8.3.2 Test all items according to Table 1, Table 2 and Table 3; Solvent - extracted seabuckthorn fruit oil includes determination of residual solvent.

8.4 型式检验

8.4 Type test

型式检验项目应包括本标准第5章规定的全部指标，正常生产时，每年进行一次检验。有下列情形之一者应进行型式检验：

列情形之一者应进行型式检验：

The type inspection items shall include all indexes specified in Chapter 5 of this standard and shall be inspected once a year during normal production. Type inspection shall be carried out under any of the following circumstances:

a) 产品定型鉴定时；

- a) In the process of product identification;
 - b) 正常生产条件下每年进行一次;
- b) Once a year under normal production conditions;
 - c) 原料、工艺、设备有较大变动时;
- c) Major changes in raw materials, processes and equipment;
 - d) 停产半年以上恢复生产时;
- d) resumption of production after suspension for more than half a year;
 - e) 国家质量监督机构提出型式检验要求时。
- e) When the type inspection requirements are put forward by the national quality supervision agency.

8.5 判定规则

8.5 Decision rules

出厂检验、型式检验中有一项检测结果不符合本标准要求时，则判定为不合格。检测结果全部符合本标准规定时，该批产品判为合格。

If one test result does not meet the requirements of this standard in the factory inspection or type inspection, it will be judged as unqualified. When all the test results meet the requirements of this standard, the batch of products shall be judged as qualified.

9 标签标识

9 Label and mark

产品标志及标签应符合 GB 7718、GB 28050 及相关规定。
Product marks and labels should comply with GB 7718, GB 28050 and relevant regulations.

10 包装、运输、贮存

10 Packing, transportation and storage

10.1 包装

10.1 The packing

包装材料应符合 GB/T 191、GB/T 17374 及国家食品卫生的有关规定和要求，应采用避光材质密封包装，并附有产品合格证。

The packaging materials shall comply with GB/T 191, GB/T 17374 and the relevant provisions and requirements of national food hygiene, and shall be sealed with light-proof materials, and the product qualification certificate shall be attached.

10.2 运输

10.2 Transportation

产品在运输过程中不能与危险品混运。运输时必须有遮盖物，避免日晒、雨淋、污染和标签脱落，防止受热及撞击。

The product cannot be mixed with dangerous goods during transportation. During transportation, cover must be provided to avoid sun, rain, contamination and label shedding, and prevent from heat and impact.

10.3 贮存

10.3 The storage

产品应保存在阴凉、干燥、通风良好的避光处或低温条件下，避免受潮。不得与有毒、有害、有异味、易挥发、易腐蚀的物品同库储存。

The product should be stored in a cool, dry, well-ventilated place away from light or under low temperature to avoid dampness. Do not store with poisonous, harmful, odorous, volatile or corrosive articles.
