

Technical Standard of International Seabuckthorn Association

# 团体标准

T/ISAS 014-2024

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## 沙棘原叶粉及其加工技术规范

Specification for Seabuckthorn leaf powder and processing  
technology

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## 前 言

本标准按照 GB/T1.1—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：甘肃农业大学、布尔津汇源生物科技有限公司、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）、高原圣果沙棘制品有限公司、新疆佩优棘生物科技有限公司、宝得瑞（河北）健康产业有限公司、内蒙古沙漠之花生态产业科技有限公司、新疆松源林果生物科技有限公司。

本标准主要起草人：蒋玉梅、李霁昕、张滨、赵金梅、卢顺光、毕阳、魏娟、李绍振、马生斌、何兴芬、殷丽强、赵军丰、王宝书、胥俊久、靳慧林。

本标准为首次发布。

## Foreword

This document was drafted in accordance with the editorial rules of the GB/T 1.1 - 2020 " Directives for standardization—Part 1: Rules for the structure and drafting of standardization documents".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing organization shall not be held responsible for identifying any or all such patent rights.

This standard is under the jurisdiction of the International Seabuckthorn Association.

This document was prepared by Gansu Agricultural University, Burqin Huiyuan Biotechnology Co., Ltd., Seabuckthorn Development and Management Center of the Ministry of Water Resources (Plant Development and Management Center for Soil and Water Conservation of the Ministry of Water Resources), Gaoyuan Shengguo Seabuckthorn Products Co., Ltd., Xinjiang Peiyouji Biotechnology Co., Ltd., Baoderui (Hebei) Health Industry Co., Ltd., Inner Mongolia Desert Flower Ecological Industry Technology Co., Ltd., Xinjiang Songyuan Fruit and Forest Biotechnology Co., Ltd.

The primary drafters of this standard were Jiang Yumei, Li Jixin, Zhang Bin, Zhao Jinmei, Lu Shunguang, Bi Yang, Wei Juan, Li Shaozhen, Ma Shengbin, He Xingfen, Yin Liqiang, Zhao Junfeng, Wang Baoshu, Xu Junjiu, and Jin Huilin.

This standard is issued for the first time.

# 沙棘原叶粉及其加工技术规范

## Specification for Seabuckthorn Leaf Powder and Processing Technology

### 1 范围

本标准规定了沙棘原叶粉的术语和定义、要求、加工工艺、加工要求、检验规则、包装、运输和贮存等。

本标准适用于以沙棘 (*Hippophae*L.) 叶片为原料, 不经发酵, 直接干燥加工而成的沙棘原叶粉及原叶粉加工技术工艺流程等。

### 1 Scope

This standard specifies the terms and definitions, requirements, processing technology, processing requirements, inspection rules, packaging, transportation, and storage of seabuckthorn leaf powder.

This standard is applicable to seabuckthorn leaf powder processed directly from the leaves of *Hippophae L.* through drying without fermentation, and the technical process of leaf powder processing.

### 2 规范性引用文件

下列文件中的内容通过文中的规范引用而构成本标准必不可少的。其中, 注日期的引用文件, 仅该日期对应的版本适用于本标准; 不注日期的引用文件, 其最新版本 (包括所有的修改单) 适用于本标准。

GB/T 191 包装储运图示标志

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 4789.1 食品安全国家标准 食品微生物学检验 总则

GB 4789.2 食品安全国家标准 食品微生物学检验 菌落总数测定

GB 4789.3 食品安全国家标准 食品微生物学检验 大肠菌群计数

GB 4789.15 食品安全国家标准 食品微生物学检验 霉菌和酵母计数

GB 5009.3 食品安全国家标准 食品中水分的测定

GB 5009.4 食品安全国家标准 食品中灰分的测定

GB 5749 生活饮用水卫生标准

GB 7718 食品安全国家标准 预包装食品标签通则

GB/T 12729.4 香辛料和调味品 磨碎细度的测定 (手筛法)

GB 14881 食品企业通用卫生规范

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

SN/T 4592-2016 出口食品中总黄酮的测定

T/AHFIA 005-2018 植物提取物及其制品中总多酚含量的测定 分光光度法

T/ISA013-2023 沙棘叶原料

国家市场监督管理总局[2023]第 70 号令 定量包装商品计量监督管理办法

## 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.

GB/T 191 Packaging - Pictorial marking for handling of goods

GB 2762 National Food Safety Standards -Maximum levels of contaminants in foods

GB 2763 National Food Safety Standards -Maximum residue limits for pesticides in food

GB 4789.1 National Food Safety Standard - Microbiological examination of food hygiene - General guidelines

GB 4789.2 National Food Safety Standard - Microbiological examination of food hygiene - Aerobic plate count

GB 4789.3 National Food Safety Standard - Microbiological examination of food hygiene - Enumeration of coliforms

GB 4789.15 National Food Safety Standard - Microbiological examination of food hygiene--Enumeration of molds and yeasts

GB 5009.3 National Food Safety Standard - Determination of moisture in foods

GB 5009.4 National Food Safety Standard - Determination of ash in foods

GB 5749 Standards for drinking water quality

GB 7718 National Food Safety Standard - General standard for the labeling of prepackaged foods

GB/T 12729.4 Spices and condiments—Determination of degree of fineness of grinding (hand sieving method)

GB 14881 General hygienic regulation for food enterprises

GB 28050 National Food Safety Standard - General rules for nutrition labeling of prepackaged foods

JJF 1070 Rules of metrological testing for net quantity of products in prepackages with fixed content

SN/T 4592-2016 Determination of total flavonoids in export food

T/AHFIA 005-2018 Determination of total polyphenol in plant extracts and its products - Spectrophotometric method

T/ISA013-2023 沙 Standard for raw materials of seabuckthorn leaf

Decree of the State Administration for Market Regulation (No. 70) - Measures for Metrological Supervision and Administration of Quantitatively Packed Commodities

### 3 术语和定义

#### 3.1 沙棘原叶粉 (Seabuckthorn leaf powder)

以未经发酵的胡颓子科沙棘属植物叶片为原料，经过干燥、粉碎、过筛分级、包装、杀菌或不杀菌等工艺加工制成的可直接食用或食品原料用的粉末状产品。

### 3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1 Seabuckthorn leaf powder

A powdered product that can be directly consumed or used as a food ingredient. It is processed from the leaves of seabuckthorn (*Hippophae*) without fermentation through processes such as drying, pulverizing, sieving and grading, packaging, with or without sterilization.

### 4 沙棘原叶粉要求

#### 4.1 原料要求

沙棘叶：新鲜、无褐变、无霉变，污染物及农药残留符合 GB 2762 和 GB 2763 要求。

### 4 Requirements for Seabuckthorn Leaf Powder

#### 4.1 Requirements for Raw Materials

Seabuckthorn leaves should be fresh, without browning or mildew, and the contaminants and pesticide residues shall comply with the regulation of GB 2762 and GB 2763.

#### 4.2 感官要求

沙棘原叶粉感官要求应符合表 1 的规定。

**表 1 感官要求**

项目	要求	检验方法
色泽	绿色或灰绿色，色泽较均匀	取适量样品，置于白色瓷盘中，在充足的自然光下观察色泽、形状、杂质，嗅其气味，尝其滋味。
滋、气味	具有沙棘叶特有的香气和滋味，无异味	
状态	粉末状	
杂质	无正常视力可见外来杂质	

#### 4.2 Sensory Requirements

The sensory requirements of seabuckthorn leaf powder shall be in accordance with Table 1.

**Table 1 Sensory Requirements**

Factor/Description	Requirements	Test Method
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Appearance	Light to Mid Green coloured powder, with relatively uniform color	Observe sample under sufficient natural light in a white porcelain plate.
Taste and Odor	Green, slightly astringent, characteristic aroma and flavor of seabuckthorn leaves, without any off-odors	Smell and taste
Texture	Powder	Visual inspection
Impurities	No visible foreign matter	Visual inspection

### 4.3 理化指标

沙棘原叶粉理化指标应符合表 2 的规定。

表 2 理化指标

项目	指标	检验方法
水分/(%)	≤8.5	GB 5009.3
灰分/(%)	≤7.5	GB 5009.4
总多酚/(%)	≥1.6	T/AHFIA 005-2018
总黄酮 <sup>a</sup> (以芦丁计)/(%)	≥0.8	SN/T 4592-2016
细度(80目过筛率)/(%)	≥85	GB/T 12729.4

<sup>a</sup> 在 T/ISA013-2023 标准的基础上计算了加工损失。

### 4.3 Chemical and Physical Characteristics

The physical and chemical characteristics of seabuckthorn leaf powder shall be in accordance with Table 2.

Table 2 Physical and Chemical Characteristics

Factor/Description	Limit	Test Method
Moisture(%)	≤8.5	GB 5009.3
Ash (%)	≤7.5	GB 5009.4
Total Polyphenols (%)	≥1.6	T/AHFIA 005-2018
Total Flavonoids (%) (calculated as rutin)	≥0.8	SN/T 4592-2016
Particle size (granularity)	More than 85% of powder shall pass through a sieve the dimensions of the mesh being diameter of 0.18 mm.	GB/T 12729.4

<sup>a</sup> Note: Flavonoids calculated based on processing loss on the basis of the T/ISAS 013 - 2023 standard.

#### 4.4 微生物指标

即食型沙棘原叶粉微生物限量应符合表 3 的规定。

**表 3 微生物指标**

项目	采样方案 a 及限量				检验方法
	n	c	m	M	
菌落总数/(CFU/g)	5	2	10 <sup>4</sup>	10 <sup>5</sup>	GB 4789.2
大肠菌群/(CFU/g)	5	1	10	100	GB 4789.3
霉菌和酵母/(CFU/g) ≤	50				GB 4789.15
<sup>a</sup> 样品的采样及处理按 GB 4789.1 执行。					

#### 4.4 Microbiological Indicators

The microbiological limits of ready - to - eat seabuckthorn leaf powder shall be in accordance with Table 3.

**Table 3 Microbiological Indicators**

Item	Sampling Plan <sup>a</sup> and Limits				Test Method
	n	c	m	M	
Maximum microbiological limits (CFU/g)	5	2	10 <sup>4</sup>	10 <sup>5</sup>	GB 4789.2
E.coli (CFU/g)	5	1	10	100	GB 4789.3
Yeast and mould (CFU/g) ≤	50				GB 4789.15
<sup>a</sup> Note: Sampling and handling of samples should be carried out in accordance with GB 4789.1.					

#### 4.5 安全性指标

污染物限量应按 GB 2762 中茶叶相关规定执行。

农药最大残留限量应按 GB 2763 中茶叶相关规定执行。

#### 4.6 净含量

净含量要求见国家市场监督管理总局[2023]第 70 号令，检验方法按 JJF 1070 的规定执行。

#### 4.5 Safety Factors

The limits of contaminants shall comply with the regulation for tea of GB 2762.

The maximum residue limits of pesticides shall comply with the regulation for tea of GB 2763.

#### 4.6 Fill of container

Net weight shall comply with Order No. 70 [2023] of the State Administration for Market Regulation, and the analysis methods shall be carried out in accordance with the provisions of JJF 1070.

## 5 加工要求

### 5.1 场地要求

- 5.1.1 加工用水应符合 GB 5749 的要求。  
5.1.2 加工卫生应符合 GB 14881 的要求。

### 5.2 原料要求

应选择干净、无腐烂、无杂质的沙棘叶，并符合 GB 2762、GB 2763 的规定。

## 5 Processing Requirements

### 5.1 Processing area Requirements

- 5.1.1 The processing water shall comply with the regulation of GB 5749.  
5.1.2 The processing hygiene shall comply with the regulation of GB 14881.

### 5.2 Raw Materials Requirements

Seabuckthorn leaves shall be clean, free from decay and impurities, and shall comply with the regulation of GB 2762 and GB 2763.

## 6 加工工艺

### 6.1 工艺流程

沙棘叶清洗→沥水→干燥→粉碎→筛分→调配→包装→成品

### 6.2 主要工艺技术

#### 6.2.1 清洗沥水

新鲜沙棘叶采摘验收后、流动水冲洗去除叶面附着物，沥干或热风吹干至表面无水分。

#### 6.2.2 干燥

沙棘叶采用自然或机械干燥方式进行干燥。

#### 6.2.3 粉碎

用除尘式粉碎机或超微粉碎机将干燥的叶片粉碎成粉。

#### 6.2.4 筛分

筛分收集符合产品粒度要求的粉末。

## 6 Processing Technology

### 6.1 Production process

Seabuckthorn leaf cleaning → Draining → Drying → Pulverizing → Sieving → Blending → Sterilization or Non-sterilization → Packaging → Final Product.

### 6.2 Main Process Techniques

#### 6.2.1 Cleaning and Draining

After being harvested and inspected, fresh seabuckthorn leaves shall be rinsed with flowing water to remove surface contaminants, then drained or dried with hot air until no visible moisture remains.

### 6.2.2 Drying

Seabuckthorn leaves shall be dried by natural or mechanical drying methods.

### 6.2.3 Pulverizing

The dried leaves shall be pulverized into powder using a dust-removal pulverizer or an ultra-micro pulverizer.

### 6.2.4 Sieving

The powder that meets the specified particle size requirements shall be collected through sieving.

## 7 检验规则

### 7.1 组批

同一次投料、同一班次、同一生产线生产的同一规格包装完好的产品为一批。

### 7.2 出厂检验

7.2.1 每批产品均应进行出厂检验，检验合格并附合格证方可出厂。

7.2.2 出厂检验项目为：外观性状、净含量、细度、水分、灰分。

## 7 Inspection Rules

### 7.1 Lot Formation

Products with the same batch of raw material input, produced in the same shift on the same production line, of the same specification, and with intact packaging are regarded as one lot.

### 7.2 Factory Inspection

7.2.1 Each batch of products shall undergo factory inspection, and may only be released after passing the inspection and being issued a certificate of conformity.

7.2.2 Factory inspection items include appearance, net weight, fineness, moisture, and ash.

### 7.3 型式检验

本标准规定的全部指标项目为型式检验项目，型式检验每年检验一次，有下列情况之一时亦应进行型式检验：

- a) 新产品投产时；
- b) 更换设备或长期停产再恢复生产时；
- c) 出厂检验结果与上次型式检验结果有较大差异时；
- d) 原料、工艺可能影响产品质量时；
- e) 国家监管部门提出要求时；
- f) 停产 6 个月以上恢复生产时。

### 7.3 Type Inspection

All the indicators specified in this standard are subject to type inspection, which shall be conducted once a year. Additional type inspections shall be performed under any of the following circumstances:

- a) When a new product is introduced into production;
- b) When the equipment is replaced or production resumes after a long - term suspension;
- c) When significant discrepancies exist between factory inspection results and the previous type inspection results;
- d) When raw materials or processes methods may affect the product quality;
- e) When required by the national regulatory authorities;
- f) When production resumes after being halted for more than six months.

### 7.4 判定规则

检验项目全部符合本标准要求时，判定该批产品质量符合本标准的规定。

检验结果中有一项或一项以上指标（即食产品微生物指标除外）不符合本标准规定时，应在同一批产品中重新加倍抽样对不合格项目进行复验，若仍有一项不符合时，则该批产品判为不合格。

即食产品微生物指标中任何一项不合格即判为该批产品不合格。

### 7.4 Judgment Rules

When all the inspection items meet the requirements of this standard, the batch of products shall be deemed to comply with the standard.

If one or more inspection indicators (excluding microbiological indicators for ready-to-eat products) do not meet the standard, double sampling shall be conducted for retesting of the non-compliant items within the same batch. If any item still fails to meet the requirements, the batch shall be deemed unqualified.

For ready-to-eat products, if any microbiological indicator is found to be non-compliant, the entire batch shall be deemed unqualified.

## 8 标志、包装、运输、贮存

### 8.1 标签

产品标志、标签应符合国家相关法律、法规及 GB/T 191、GB 7718、GB 28050 的规定。

## 8 Packaging, Transportation and Storage

### 8.1 Labeling

Product marking and labels shall comply with relevant national laws, regulations, and the requirements of GB/T 191, GB 7718, and GB 28050.

## 8.2 包装

包装材料和容器应符合相应的国家标准及有关规定。

### 8.2 Packaging

Packaging materials and containers shall comply with the corresponding national standards and relevant regulations.

## 8.3 运输

运输工具应清洁、卫生、无异味、无污染；运输过程中应防雨、防潮、防暴晒。严禁与有毒有害、有异味、易污染的物品混装、混运。

### 8.3 Transportation

Transportation vehicles shall be clean, hygienic, odor - free, and free from contamination. During the transportation, products shall be protected from rain, moisture, and direct sunlight. It is strictly prohibited to transport them together with toxic, harmful, odorous, or easily contaminated items.

## 8.4 贮存

应贮存在清洁卫生、通风、干燥、无异味处，严禁与有毒有害、易污染的物品混存。

### 8.4 Storage

Products shall be stored in a clean, hygienic, well-ventilated, dry, and odor - free environment. It is strictly prohibited to store together with toxic, harmful, and easily contaminated items.