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Technical Standard of International Seabuckthorn Association

团体标准

T/ISAS 016-2024

沙棘清汁

Seabuckthorn clear juice

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前 言

按照 GB/T1.1—2020《标准化工作导则第1部分：标准化文件的结构和起草规则》的规定起草。

本标准由国际沙棘协会归口。

本标准的起草单位：中北大学、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）、新疆益中园农业科技开发有限责任公司、承德宇航人高山植物应用技术有限公司、山西益健生物科技有限公司、石河子大学、高原圣果沙棘制品有限公司、河北神兴沙棘研究院、新疆中科沙棘科技有限公司、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。

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Foreword

It was drafted in accordance with the provisions of GB/ T1.1-2020 "Standardization Work Guidelines - Part 1: Structure and Drafting Rules for Standardization Documents".

This standard is under the jurisdiction of the International Sea Buckthorn Association.

The drafting unit of this standard: North University of China, Management Center for Sea Buckthorn Development of Ministry of Water Resources (Plant Development and Management Center for Soil and Water Conservation of the Ministry of Water Resources), Xinjiang Yizhongyuan Agricultural Science and Technology Development Co., LTD., Chengde Yuhangren Alpine Plant Application Technology Co., LTD., Shanxi Yijian Biotechnology Co., LTD., Shihezi University, Gaoyuan Shengguo Sea Buckthorn Products Co., LTD., Hebei Shenxing Sea Buckthorn Research Institute, Xinjiang Zhongke Sea Buckthorn Technology Co., LTD., Baoderui (Hebei) Health Industry Co., LTD., Inner Mongolia Desert Flower Ecological Industry Technology Co., LTD.

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沙棘清汁

Seabuckthorn clear juice

1 范围

本标准规定了沙棘清汁的术语和定义、要求、试验方法、检验规则、标志、包装、运输和贮存。

本标准适用于沙棘(*Hippophae* L.)果及沙棘原果汁为原料加工而成的食品工业用沙棘清汁。

1. Range

This standard specifies the terms and definitions, requirements, test methods, inspection rules, marking, packaging, transportation and storage of sea buckthorn juice.

This standard is applicable to the clear juice of sea buckthorn (*Hippophae* L.) processed from the fruit of sea buckthorn and the original juice of sea buckthorn for the food industry.

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条款。凡是注明日期的引用文件，仅所注明日期的版本适用本标准。凡是不注明日期的引用文件，其最新版本（包括所有修改单）适用于本标准。

- GB 2760 食品安全国家标准 食品添加剂使用标准
- GB 2761 食品安全国家标准 食品中真菌毒素限量
- 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 5009.12 食品安全国家标准 食品中铅的测定
- GB 5749 国家标准 生活饮用水卫生标准
- GB 4806.1 食品安全国家标准 食品接触材料及制品通用安全要求
- GB 7101 食品安全国家标准 饮料
- GB 7718 食品安全国家标准 预包装食品标签通则
- GB/T 12143 国家标准 饮料通用分析方法
- GB 12456 食品安全国家标准 食品中总酸的测定
- GB 12695 食品安全国家标准 饮料生产企业良好生产规范
- GB 14881 食品安全国家标准 食品生产通用卫生规范
- 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

T/ISAS 002—2021 团体标准 沙棘原果汁

2. Normative references

The contents of the following documents constitute indispensable provisions of this standard through the normative references in the text. For all the referenced documents with a specified date, only the version of the date indicated is applicable to this standard. For all the referenced documents without a specified date, the latest version (including all amendments) is applicable to this standard.

GB 2760 National Food Safety Standard - Standard for the Use of Food Additives

GB 2761 National Food Safety Standard - Limits of Mycotoxins in Foods

GB 2762 National Food Safety Standard - Limits of Contaminants in Food

GB 2763 National Food Safety Standard - Maximum Residue Limits of Pesticides in Food

GB 5009.12 National Food Safety Standard - Determination of Lead in Food

GB 5749 National Standard - Hygienic Standard for Drinking Water

GB 4806.1 National Food Safety Standard - General Safety Requirements for Food Contact Materials and Articles

GB 7101 National Food Safety Standard for Beverages

GB 7718 National Food Safety Standard - General Rules for the Labelling of Prepackaged Foods

GB/T 12143 National Standard - General Analytical Methods for Beverages

GB 12456 National Food Safety Standard - Determination of Total Acid in Foods

GB 12695 National Food Safety Standard Good Manufacturing Practice for Beverage Producers

GB 14881 National Food Safety Standard - General Hygienic Practice for Food Production

GB 28050 National Food Safety Standard - General Rules for Nutrition Labels of Prepackaged Foods

JJF 1070 Measurement Inspection Rules for Net Content of Quantitatively Packaged Commodities

Group Standard T/ISAS 002-2021 Sea Buckthorn Original Juice

3 术语和定义

3.1 沙棘清汁 (Seabuckthorn clear juice)

以沙棘果或沙棘原果汁为原料，通过预处理（清洗、打浆或压榨等，以沙棘原果汁为原料无此步骤）、酶解或不酶解、澄清、过滤、杀菌、灌装等加工工序制成的产品。

3 Terms and Definitions

3.1 Seabuckthorn clear juice

Products made from sea buckthorn fruits or sea buckthorn original juice as raw materials, through pretreatment (such as cleaning, pulping or pressing, etc., this step is not necessary if sea buckthorn original juice is used as raw material), enzymatic hydrolysis or non-enzymatic hydrolysis, clarification, filtration, sterilization, filling and other processing procedures.

4 质量要求

4.1 原料

新鲜良好，成熟适度，无病虫害及霉烂的沙棘果实（纯果或带枝沙棘果），或符合 T/ISAS 002—2021 标准要求的沙棘原果汁。

4 Quality Requirements

4.1 Raw Materials

Fresh and good sea buckthorn fruits (pure fruits or sea buckthorn fruits with branches), moderately ripe, free from diseases, pests and mold, or sea buckthorn original juice that meets the requirements of T/ISAS 002-2021 standard.

4.2 （加工企业）卫生要求

应符合 GB 12695 和 GB 14881 的规定。沙棘果生产加工过程中的清洗用水应符合 GB 5749 的要求，食品加工助剂符合 GB2760 的要求。

4.2 (Processing Enterprises) Hygiene Requirements

It should comply with the provisions of GB 12695 and GB 14881. The cleaning water used in the production and processing of sea buckthorn fruits should comply with the requirements of GB 5749, and the food processing AIDS should comply with the requirements of GB2760.

4.3 感官指标

应符合表 1 的规定。

4.3 Sensory Indicators

It should comply with the provisions of Table 1.

表 1 沙棘清汁感官指标

指 标	要 求
色泽	产品呈橙色或橙黄色、色泽均匀
滋味、气味	具有沙棘汁特有的气味及滋味，无异味
组织状态	液态、透明、久置后允许有少量沉淀
杂质	无正常视力可见外来杂质

Table 1 Sensory Indicators of Sea buckthorn Extract

Indicator	Requirements
Colour	The product is orange or orange-yellow with uniform color
Taste, smell	It has the characteristic smell and taste of sea buckthorn juice, with no off-flavors
Organizational status	Liquid, transparent. A small amount of sediment is allowed after long-term storage
Impurity	No foreign impurities can be seen with normal vision

4.4 理化指标

应符合表 2 的规定。

表 2 理化指标

项 目	指 标
可溶性固形物（折光法，20℃）/% ≥	7
总酸（以苹果酸计）/（%） ≥	1.5
透光度（660nm）（%） ≥	75
褐变吸光度（420nm） $A_{420}/3^* \leq$	0.5
浊度，NTU ≤	10
果胶试验（酶解工艺适用）	阴性
*表示样品稀释 3 倍后检测其吸光度的数值	

4.4 Physical and Chemical Indicators

It should comply with the provisions of Table 2.

Table 2 Physical and Chemical Indicators

Item	Indicator
Soluble solids (refractive method, 20°C) /% ≥	7
Total acid (calculated as malic acid)/(%) ≥	1.5
Transmittance (660nm) (%) ≥	75
Browning absorbance (420nm) $A_{420}/3^* \leq$	0.5
Turbidity, NTU ≤	10

Pectin test (applicable to enzymatic hydrolysis process)	Negative
* It represents the absorbance value of the sample after being diluted three times	

表 3 褐变评价标准

$A_{420}/3$	≤ 0.4	0.4-0.5	0.5-0.6	≥ 0.6
标准	未褐变	轻微褐变	褐变	严重褐变

Table 3 Evaluation Criteria for Browning

$A_{420}/3$	≤ 0.4	0.4-0.5	0.5-0.6	≥ 0.6
Standard	Non-browning	Slight Browning	Browning	Severe Browning

4.5 卫生指标

4.5.1 污染物限量应符合 GB2762 或 T/ISAS 002—2021（非直接饮用类）的规定。

4.5.2 真菌毒素限量应符合 GB2761 的规定。

4.5.3 农药残留限量应符合 GB2763 的规定

4.5 Hygiene Indicators

4.5.1 The limits of pollutants shall comply with the provisions of GB2762 or T/ISAS 002-2021 (Non-direct drinking category).

4.5.2 The limits of mycotoxins shall comply with the provisions of GB2761.

4.5.3 The pesticide residue limits shall comply with the provisions of GB2763

4.6 食品添加剂

4.6.1 食品添加剂使用及限量应符合 GB 2760 的规定。

4.6 Food Additives

4.6.1 The use and limits of food additives shall comply with the provisions of GB 2760.

4.7 净含量

应符合《定量包装商品计量监督管理办法》的规定。

4.7 Net Content

It should comply with the provisions of the "Measures for the Supervision and Administration of Quantitative Packaging Commodities Measurement".

4.8 微生物限量

微生物限量应符合 GB 7101 的要求。

4.8 Microbial Limits

The microbial limit shall comply with the requirements of GB 7101.

5 检验方法

5.1 感官要求

5.1.1 色泽、组织形态及杂质

取混合均匀的被测样品 50mL 于无色透明的比色管中，置于明亮处，迎光观察其色泽、组织形态及杂质。

5.1.2 香气和滋味

取混合均匀的被测样品 50mL 于洁净的容器中，立即用嗅觉鉴别其气味，用味觉品尝其滋味，检查有无异味，每次品尝样品前，须用清水漱口。

5 Inspection Methods

5.1 Sensory Requirements

5.1.1 Color, microstructure and impurities

Take 50mL of the well-mixed sample to be tested into a colorless and transparent colorimetric tube, place it in a bright area, and observe its color, tissue morphology and impurities against the light.

5.1.2 Aroma and Taste

Take 50mL of the well-mixed sample to be tested and put it in a clean container. Immediately identify its smell with your sense of smell and taste it with your sense of taste to check for any off-flavors. Before each sample tasting, rinse your mouth with clean water.

5.2 理化指标

5.2.1 总酸

按 GB 12456 规定的方法测定。

5.2 Physical and Chemical Indicators

5.2.1 Total acid

Determined in accordance with the method stipulated in GB 12456.

5.3 铅

按 GB 5009.12 规定的方法测定。

5.3 Lead

Determined in accordance with the method stipulated in GB 5009.12.

5.4 净含量

按 JJF 1070 规定的重量法检验。

5.4 Net Content

Inspect in accordance with the gravimetric method stipulated in JJF 1070.

6 检验规则

6.1 组批原则

由同一批原料、同一班次、同一条生产线生产的包装完好的同一品种、同一规格产品为一组批。

6 Inspection Rules

6.1 Group Batch Principle

Products of the same variety and specification produced by the same batch of raw materials, the same shift and the same production line with intact packaging constitute one batch.

6.2 抽样方法和数量

采用无菌包装容器包装方式的产品，每批取样 3 次，在灌装过程中，分别在第一桶灌装完后、中间桶灌装完后、最后一桶灌装完后取样，每次取样最少两个小无菌袋（对于非商业无菌灌装，可用样品瓶），每袋不少于 1L（对于用样品瓶取样，每次不少于 2L）。对每次所取样品按出厂检验项目检验并留样。

其它包装方式的产品，随机从每一批产品中抽取 2%，但不得少于 3 件。

6.2 Sampling Method and Quantity

For products packaged in aseptic containers, samples should be taken three times per batch. During the filling process, samples should be taken respectively after the first bucket is filled, after the middle bucket is filled, and after the last bucket is filled. At least two small aseptic bags should be taken each time (or for non-commercial aseptic filling, sample bottles can be used), and each bag should be no less than 1L (for sampling with sample bottles, No less than 2 liters each time. Each sample taken should be inspected according to the factory inspection items and retained.

For products of other packaging methods, 2% shall be randomly selected from each batch of products, but no less than 3 pieces.

6.3 出厂检验

每批产品出厂前，生产厂质检部门都应对本批产品进行出厂检验。出厂检验的项目包括感官指标、可溶性固形物、总酸、浊度、褐变、果胶试验（有酶解工艺适用）、透光度（660nm）、菌落总数、霉菌、酵母菌、大肠菌群、净含量、标签和包装，经检验合格并附合格证的产品方可出厂。

6.3 Factory Inspection

Before each batch of products leaves the factory, the quality inspection department of the production plant should conduct factory inspection on this batch of products. The items for factory inspection include sensory indicators, soluble solids, total acid, turbidity, Browning, pectin test (with enzymatic hydrolysis process applicable), light transmittance (660nm), total colony count, mold, yeast, coliform bacteria, net content, label and packaging. Only products that pass the inspection and are accompanied by a certificate of conformity can be released from the factory.

6.4 型式检验

型式检验项目应包括本标准规定的全部指标，正常生产时，每年进行一次检验。有下列情况之一者，也应进行型式检验。

- a. 原料、设备或工艺有较大改变，有可能影响产品质量时；
- b. 产品长期停产，恢复生产时；
- c. 出厂检验结果与上次型式检验有较大差异时；
- d. 国家质量监督机构提出进行型式检验时。

6.4 Type Inspection

The type inspection items shall include all the indicators stipulated in this standard. During normal production, an inspection shall be conducted once a year. Type inspection shall also be conducted in any of the following circumstances.

- a. When there are significant changes in raw materials, equipment or processes that may affect product quality;
- b. When the product has been out of production for a long time and production resumes;
- c. When the factory inspection results differ significantly from the last type inspection;
- d. When the national quality supervision institution proposes to conduct type inspection.

6.5 判定规则

6.5.1 检验结果全部合格时，判定整批产品合格。

6.5.2 若微生物指标检验结果不合格，则判定整批产品不合格，不得复检。

6.5.3 若有不超过两项（含两项）不符合本标准，可在同批产品中加倍抽样进行复检，以复检结果为准。若复检结果仍有一项不符合本标准，则判定整批产品不合格。

6.5.4 若有三项以上（含三项）不符合本标准，直接判定整批产品不合格。

6.5 Judgment Rules

6.5.1 When all the inspection results are qualified, the entire batch of products shall be judged as qualified.

6.5.2 If the test results of microbial indicators are not qualified, the entire batch of products shall be judged as unqualified and shall not be re-tested.

6.5.3 If no more than two (including two) items do not meet this standard, double the sampling in the same batch of products for re-inspection, and the re-inspection results shall prevail. If the re-inspection result still shows that one item does not meet this standard, the entire batch of products shall be judged as unqualified.

6.5.4 If three or more items (including three) do not conform to this standard, the entire batch of products shall be directly judged as non-conforming.

7 标识和标签

7.1 产品的标识、标签应符合 GB 7718 和 GB 28050 的规定。

7.2 食品标签中需标注产品的饮用方法

直接饮用的产品可以标注“可直接饮用”或“开瓶即饮”等；非直接饮用的产品必须标注或调配方法。

7 Identification and labels

7.1 The identification and labels of the products shall comply with the provisions of GB 7718 and GB 28050.

7.2 The food label should indicate the method of consumption of the product

Products that are ready for direct consumption can be labeled as "ready for direct consumption" or "ready to drink upon opening the bottle", etc. Products that are not for direct consumption must be labeled or have their blending methods indicated.

8 包装、贮存和运输

8.1 包装

应包装在封闭容器中，包装容器和材料应符合相应的卫生标准和有关规定。

8.2 贮存

成品应贮存在干燥、通风良好或低温的场所，不得与有毒、有害、有异味、易挥发、易腐蚀的物品同处贮存。

8.3 运输

运输产品时应避免日晒、雨淋。不得与有毒、有害、有异味或影响产品质量的物品混装运输。

8 Packaging, storage and transportation

8.1 Packaging

It should be packaged in a closed container. The packaging container and materials should comply with the corresponding hygiene standards and relevant regulations.

8.2 Storage

Finished products should be stored in a dry, well-ventilated or low-temperature place and must not be stored together with toxic, harmful, odorous, volatile or corrosive items.

8.3 Transportation

When transporting products, they should be protected from direct sunlight and rain. It must not be transported together with toxic, harmful, odorous or items that affect product quality.

附录 A: 果胶试验

Appendix A: Pectin test

1. 试剂和溶液

1.1 乙醇（96%，体积分数）

1.2 浓盐酸

1.3 酸化乙醇：吸取 1mL 浓盐酸加入 100mL 乙醇（96%，体积分数）中，混匀。

2 分析步骤

取一份沙棘清汁试样，加入两份酸化乙醇，轻轻上下倒置混合三次，静置 15min，如有凝胶或絮状物出现，则果汁中含有果胶。反之，则果胶试验为阴性。

1. Reagents and solutions

1.1 Ethanol (96%, volume fraction)

1.2 Concentrated Hydrochloric acid

1.3 Acidify ethanol: Take 1mL of concentrated hydrochloric acid and add it to 100mL of ethanol (96%, volume fraction), then mix well.

2 Analysis Steps

Take a sample of sea buckthorn clear juice, add two parts of acidified ethanol, gently invert and mix three times, let it stand for 15 minutes. If there is gel or flocculent substance, it indicates that the juice contains pectin. Conversely, the pectin test is negative.