DUS 2172

DRAFT UGANDA STANDARD

First Edition
2020

Chia oil — Specification

Reference number
DUS 2172: 2020

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: +256 414 333 250/1/2/3
Fax: +256 414 286 123
E-mail: info@unbs.go.ug
Web: www.unbs.go.ug

Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to co-ordinate the elaboration of standards and is

(a) a member of International Organisation for Standardisation (ISO) and

(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and

(c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of key stakeholders including government, academia, consumer groups, private sector and other interested parties.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

The committee responsible for this document is Technical Committee UNBS/TC2, *Food and agriculture*, Subcommittee SC 2, *edible oil seeds, fats and oils*.

.

Chia oil — Specification

1 Scope

This Draft Uganda standard specifies the requirements, sampling and test methods of virgin chia (***Salvia hispanica L.***) oil for human consumption.

2 Normative references

The following referenced documents 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.

US EAS 38, Labelling of pre-packaged foods

AOAC 952.13, Arsenic in food. Silver diethyldithiocarbamate

CODEX STAN 192, General Standard for Food Additives

US EAS 38, Labelling of pre-packaged foods — Specification

US 1659, Material in contact with food – Requirements for packaging materials

US EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice

US ISO 660, Animal and vegetable fats and oils — Determination of acid value and acidity

US ISO 661, Animal and vegetable fats and oils — Preparation of test sample

US ISO 662, Animal and vegetable fats and oils — Determination of moisture and volatile matter content

US ISO 3596, Animal and vegetable fats and oils — Determination of unsaponifiable matter — Method using diethyl ether extraction

US ISO 3657, Animal and vegetable fats and oils — Determination of saponification value

US ISO 3961, Animal and vegetable fats and oils — Determination of iodine value using diethyl ether extraction

US ISO 5555, Animal and vegetable fats and oils — Sampling

US ISO 6320, Animal and vegetable fats and oils — Determination of refractive index

US ISO 6321, Animal and vegetable fats and oils — Determination of melting point in open capillary tubes (slip point)

US ISO 6883, Animal and vegetable fats and oils — Determination of conventional mass per volume (litre weight in air)

US ISO 8294, Animal and vegetable fats and oils — Determination of copper, iron and nickel contents — Graphite furnace atomic absorption method US ISO 5555, Animal and vegetable fats and oils -- Sampling

3 Terms and definitions

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

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

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

3.1
Virgin chiaoil,
are edible oils obtained from chia seed without altering the nature of the oil

3.2
Food grade materials

4 Requirements

4.1 General requirements

Chia oil shall be

a) of colour characteristic of the product

b) free from foreign odour;

c) free from foreign matter; and

d) free from adulterants, separated water and added colouring substances.

4.2 Specific requirements

Chia oil shall comply with requirements stipulated in table 1 below.

Table 1: Specific requirements for virgin chia oil

S. No	Characteristics	Requirements	Method of test
i	Moisture and volatile matter at 105 ˚C, % m/m max.	<0.03 %	US ISO 662
ii)	Relative density (50 °C/ water at 20 °C)	0.916 – 0.933	US ISO 6883
iii)	Refractive index, (ND 50 ºC)	1.411 – 1.490	US ISO 6320
iv	Free Fatty Acid (%), maximum	5.0	US ISO 660
v	Peroxide Value, maximum	20	US ISO 396O
vi)	Saponification value (mg KOH/g, oil)	190 – 209	US ISO 3657
vii)	Unsaponifiable matter, g/kg, max.	12	US ISO 3596
viii)	Iodine value (Wijs) g/100g, min.	166 - 208	US ISO 3961

ix	Iron , mg/g, max	4	US ISO 8294
x	Copper, mg/g, max	0.4	

5. Food additives

Only the food additives permitted in US CODEX STAN 192 standards for food additives may be used.

6 Contaminants

6.1 Pesticide residues

Chia oil shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

6.2 Heavy metals

Chia oil shall comply with those maximum limits specified in Table 2 when tested in accordance with the methods specified therein.

Table 2— Limits for contaminants for Chia oil

S/N.	Parameter	Limit, max	Test Method
i	Lead (Pb), mg/kg	0.1	US ISO 12193
ii	Arsenic (As), mg/kg	0.1	US ISO 2590/ AOAC 952.13

7 Hygiene

Chia oil shall be produced, processed, handled and stored in accordance with US EAS 39.

8 Packaging

Chia oil shall be packaged in food grade containers and sealed in manner conforming to to ensure the safety and quality requirements specified in this standard are maintained throughout the shelf life of the product

9 Labelling

9.1 In addition to the requirements in US EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked on the container

a) the name of the product to be declared on the label shall be “Virgin Chia oil **”** or accompanied by the specific name of the nut/s used;

b) name, location and physical address of the manufacturer;

c) net contents by weight in metric (`Systeme International') units;

d) country of origin;

e) lot identification;

f) the statement “Store in a cool dry place and away from contaminants”;

g) best before date/expiry date;

h) date of manufacture;

i) storage conditions;

j) instructions for disposal of used package;

k) list of ingredients; and

10 Methods sampling

Sampling of chia oil shall be carried in accordance with US ISO 5555

Annex A

Informative

Fatty acid profile for chia seed oil

Data on the fatty acid composition of chia seed oil (%) reported in literature

Fatty acid	1	2	3	4	5	6	7	8
C12:0	-	0.02	-	-	-	0.03	-	-
C14:0	-	0.05	0.04	-	-	0.06	0.03	-
C15:0	-	-	0.02	-	-	-	-	-
C16:0	7.07	7.15	7.47	5.86	8.56	7.04	6.81	7.1
C17:0	0.16	-	0.05	-	-	-	0.05	
C18:0	2.81	3.31	0.29	2.5	3.38	2.84	4.26	3.24
C20:0	0.12	0.35	0.15	-	5.07	0.02	0.35	-
C22:0	-	-	0.06	-	-	-	0.08	-
C23:0	-	-	-	-	-	-	-	-
C16:1ω7	-	0.03	0.06	-	-	0.03	0.06	-
C17:1ω7	-	-	-	-	-	-	0.01	-
C18:1ω7	0.06	-	-	0.59	-	-	-	-
C18:1ω9	5.5	7.19	2.43	6.16	10.24	7.3	7.52	10.53
C20:1	-	-	0.03	-	-	-	0.15	-
C22:1ω9	-	-	-	-	-	-	-	-
C18:2ω6	19.84	18.39	20.4	17.67	18.69	18.89	19.88	20.37
C18:3ω6	-	-	0.06	-	-	-	0.24	-
C18:3ω3	63.64	63.1	68.52	54.49	54.08	63.79	60.69	59.76
C20:3ω6	-	-	0.01	-	-	-	-	-
C20:4ω6	-	-	0.13	-	-	-	-	-
C22:6ω3	-	-	0.05	-	-	-	-	-
∑SFA	10.16	10.88	8.08	8.36	17.01	9.99	11.45	10.25
∑PUFA	89.84	81.49	89.14	71.96	72.77	82.68	80.81	80.13
P/S	8.85	7.49	11.03	8.61	4.28	8.28	7.06	7.82
∑ω3/∑ω6	3.21	3.43	3.38	3.13	2.89	3.33	3.03	2.93

Fatty acid abbreviations are as follows: 12:0, lauric acid; 14:0, myristic acid; 15:0, pentadecylic acid; 16:0, palmitic acid; 17:0, margaric acid; 18:0, stearic acid; 20:0, arachidic acid; 22:0, behenic acid;

23:0, tricosylic acid; 16:1ω7, palmitoleic acid; 17:1ω7, margaroleic acid; 18:1ω9, oleic acid; C20:1, eicosenoic acid; 22:1ω9, erucic acid; 18:2ω6, linoleic acid; 18:3ω3, linolenic acid; 20:3ω6, dihomo-gamma-linolenic acid (DGLA); 20:4ω6, arachidonic acid; 22:6ω3, docosahexaenoic acid (DHA); ∑SFA = sum of the saturated fatty; ∑PUFA = sum of polyunsaturated fatty acids; ∑ω6 = sum of omega-6 fatty acids (18:2ω6); ∑ω3 = sum of omega-3 fatty acids (18:3ω3); 1.

Bibliography

[1] COMMISSION IMPLEMENTING DECISION of 8 December 2014 authorising the placing on the market of chia oil (Salvia hispanica) as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council

Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

Further particulars of the terms and conditions of licensing may be obtained from the Director, Uganda National Bureau of Standards.

DUS 1953: 2020

ICS 67.200.20

Price based on nn pages