



DRAFT TANZANIA STANDARD

Edible Hazelnut oil – Specification

draft for public comments

TANZANIA BUREAU OF STANDARDS

0 Foreword

Edible hazelnut oil is a vegetable oil derived from the kernel of hazelnut fruit (*Corylus avellana* L.). It is widely used in baked goods, salad dressing, cooking oil, and for food preparation etc.

Considering that the product is widely used for human consumption, it is very important to ensure its safety and quality.

This Tanzania standard lays down specifications aiming at ensuring the safety and quality of edible Hazelnut oil produced or traded in the country for human consumption.

In preparation of this Tanzania standard, considerable help was derived from:

CXS 210 -1999 (Amended 2023) *Codex standard for named vegetable oils*, published by Codex Alimentarius Commission.

In reporting the results of a test or analysis made in accordance with this Tanzania Standard, if the final value observed or calculated is to be rounded off, it shall be done in accordance with TZS 4.

1 Scope

This Tanzania Standard specifies the requirements, sampling and test methods for hazelnut oil derived from the kernel of hazelnut fruit (*Corylus avellana* L.) intended for human consumption.

2 Normative Reference

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

CXS 192, *General standards for food additives*

TZS 4, *Rounding off numerical values*

TZS 54, *Animal and Vegetable fats and oils – Sampling*

TZS 76, *Methods for determination of arsenic*

TZS 109, *Food processing units – Code of hygiene — General*

TZS 268, *General atomic absorption – Spectro – Photometric method for determination of lead in food stuffs*

TZS 288 (Part 2), *Animal and vegetable fats and oils — Part 2: Analysis by gas chromatography of methyl esters of fatty acids*

TZS 538, *Packaging and labeling of foods*

TZS 799, *Foodstuffs – Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products – High-performance liquid chromatographic method*

TZS 1313, *Fortified edible oils and fats — Specification*

TZS 1322, *Oils and fats Sampling and test methods – Purity test*

TZS 1324, *Animal and vegetable fats and oils – Determination of peroxide value-Iodometric (visual) end point determination*

TZS 1325, *Animal and vegetable fats and oils - Determination of saponification value*

TZS 1326, *Animal and vegetable fats and oils – Determination of moisture and volatile matter*

TZS 1327, *Animal and vegetable fats and oils – Determination of iodine value*

TZS 1328, *Essential oils – Determination of relative density at 20 °C – Reference method*

TZS 1329, *Animal and vegetable fats and oils – Determination of refractive index*

TZS 1331, *Animal and vegetable fats and oils – Determination of acid value and acidity*

TZS 1332, *Animal and vegetable fats and oils – Determination of unsaponifiable matter-method using diethyl ether extraction*

TZS 1335, *Animal and vegetable fats and oils – Determination of copper, iron and nickel content-graphite furnace atomic absorption*

TZS 1336, *Animal and vegetable fats and oils – Determination of insoluble impurities content*

3 Terms and definitions

For the purpose of this document, the following terms and definitions below shall apply:

3.1 edible hazelnut oil

edible oil derived from the kernel of hazelnut fruit (*Corylus avellana* L.) complies with the requirements of this standard

3.2 virgin hazelnut oil

hazelnut oil obtained, without altering the nature of the oil, by mechanical procedures, for example, expelling or pressing, and the application of heat only. It may have been purified by washing with water, settling, filtering and centrifuging only.

3.3 cold pressed hazelnut oil

hazelnut oil obtained, without altering the oil, by mechanical procedures only, e.g. expelling or pressing, without the application of heat. They may have been purified by washing with water, settling, filtering and centrifuging only

3.4 refined hazelnut oil

hazelnut oil obtained, by mechanical procedures and/or solvent extraction and subjected to refining processes.

4 Requirements

4.1 General requirements

4.1.1 Edible hazelnut oil shall be free from;

- a) adulterants, sediments, suspended or foreign matter, separated water
- b) rancid odour and taste.

4.2 Specific requirements

Edible hazelnut oil shall comply with requirements given in Table 1 when tested in accordance with the methods specified therein.

Table 1- Specific requirements for edible hazelnut oil

S. No.	Parameter	Requirement	Test method
i.	Relative density(at 20 °C/water at 20 °C)	0.898-0.915	TZS 1328
ii.	Refractive index,(ND 40 ° C)	1.456 - 1.463	TZS 1329
iii.	Saponification value, mg KOH/g oil	188 - 198	TZS 1325
iv.	Iodine value (Wij's), g/100	81– 95	TZS 1327
v.	Unsaponifiable matter, g/kg, max.	15	TZS 1332
vi.	Moisture and matter volatile at 105 ° C, % m/m, max.	0.2	TZS 1326
vii.	Insoluble impurities, % m/m, max.	0.05	TZS 1336
viii.	Acid value, % mg KOH/g Oil, max.	Refined oils: 0.6 Cold pressed and virgin oils: 4	TZS 1331
ix.	Soap content, % m/m, max.	0.005	TZS 1322
x.	Peroxide value, mEq peroxide- oxygen/kg oil, max	Refined oils :10 Cold pressed and virgin oils: 15	TZS 1324
xi.	Iron (Fe) mg/kg, max	Virgin 5.0 Refined 1.5	TZS 1335
xii.	Copper (Cu) mg/kg, max	Virgin 0.4 Refined 0.1	TZS 1335

5 Food additives

5.3.1 Food additives shall not be used in virgin or cold pressed hazelnut oil.

5.3.2 Refined hazelnut oil may contain food additives in accordance with CXS 192.

6 Fortification

Edible hazelnut oil may be fortified in accordance with TZS 1313.

7 Hygiene

Edible hazelnut oil shall be produced, processed, handled and stored in accordance to TZS 109.

8 Contaminants

8.1 Pesticide residues

Edible hazelnut oil shall comply with relevant maximum pesticide residue limits established by the Codex Alimentarius Commission.

8.2. Heavy Metals contaminants

Edible hazelnut oil shall comply with maximum limits for heavy metal contaminants as specified in Table 2.

Table 2–Maximum Limits for Heavy metal contaminants in edible hazelnut oil

S/No.	Parameter	Maximum level	Test method
1	Lead (Pb) mg/kg	0.08	TZS 268
2	Arsenic (As) mg/kg	0.1	TZS 76

8.3 Aflatoxin

Aflatoxin level for edible hazelnut oil shall not exceed the maximum limits specified in Table 3 when tested in accordance with test method specified therein:

Table3 - Maximum limits for aflatoxins in edible hazelnut oil

S/No	Parameter	Maximum Limit	Test Method
1	Total aflatoxin content, mg/kg,	10	TZS 799
2	Aflatoxin B1, mg/kg,	5	

9 Packing, Marking And Labelling

Edible Hazelnut oil shall be packed, marked and labelled in accordance with TZS 538.

9.1 Packaging

Edible hazelnut oil shall be packaged in food grade containers and sealed in manner to ensure safety and quality requirements of the product are maintained throughout the shelf life.

9.2 Marking and labelling

9.2.1 In addition each container of edible hazelnut oil shall be legibly and indelibly marked with the following information:

- Name of the product shall be "Hazelnut oil ";
- The words virgin or refined shall be declared on the label to indicate the type of oil;
- Name, and physical address of the manufacturer and/or packer;
- Batch or lot number;
- Date of manufacture;
- Expiry date;
- Net weight in Metric unit;
- Country of origin;

- i) Storage conditions; and
- j) List of ingredients in descending order, including the specific name of additives when additive used in refined;

9.2.3 The containers may also be marked with the TBS Standards Mark of Quality.

NOTE – The TBS Standards Mark of Quality shall be used by the manufacturers only under licence from TBS. Particulars of conditions under which the licences are granted, may be obtained from TBS.

10 Sampling and Tests

10.1 Sampling

Edible hazelnut oil shall be sampled in accordance with TZS 54.

10.2 Tests

Edible hazelnut oil shall be tested in accordance with the test methods given in this Tanzania standard.

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