



DRAFT TANZANIA STANDARD

Edible tallow – Specification

draft for stakeholders comments

TANZANIA BUREAU OF STANDARDS

0 Foreword

Edible tallow is primarily derived from rendered beef tissue but can contain other animal fat as well. It is hard fat obtained from bovine animals and used in foodstuffs.

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

In preparation of this Tanzania standard considerable help was derived from:
CODEX STAN 211 -1999 (Amended 2019) *Codex standard for named animal fats* 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 prescribes the requirements, sampling and testing methods for tallow 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;

CODEX STAN 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 288-1, *Animal and vegetable fats and oils -- Gas chromatography of fatty acid methyl esters -- Part 1: Guidelines on modern gas chromatography of fatty acid methyl esters*

TZS 288-2, *Animal and vegetable fats and oils -- Gas chromatography of fatty acid methyl esters -- Part 2: Preparation of methyl esters of fatty acids*

TZS 288-3, *Animal and vegetable fats and oils -- Gas chromatography of fatty acid methyl esters -- Part 3: Preparation of methyl esters using trimethylsulfonium hydroxide (TMSH)*

TZS 288-4, *Animal and vegetable fats and oils -- Gas chromatography of fatty acid methyl esters -- Part 4: Determination by capillary gas chromatography*

TZS 538, *Packaging and labeling of foods*

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

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*

TZS 1369, *Animal and Vegetable fats and oils – Determination of Butylhydroxyanisole (BHA) and Butylhydroxytoluene (BHT) – Gas liquid chromatographic method*

TZS 1370, *Animal and Vegetable fats and oils – Determination of tocopherol and tocotrienol content by High Performance Liquid Chromatography*

TZS 1775, *Animal and Vegetable fats and oils — Detection and identification of antioxidants - Thin-layer chromatographic method*

TBS/AFDC 04(586) CD1,Animal and vegetable fats and oils - Determination of titre

3 Terms and definitions

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

3.1 Edible tallow (dripping)

product obtained by rendering the clean, sound, fatty tissues (including trimming and cutting fats), attendant muscles and bones of bovine animals and/or sheep (*Ovis aries*) in good health at the time of slaughter and fit for human consumption.

4 Requirements

4.1 General requirements

Edible tallow shall;

- a) have off white to pale yellow colour, odour and taste characteristic of the designated product
- b) be free from adulterants, foreign matter, rancid odour and taste.

4.2 Specific requirements

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

Table 1-Specific requirements for edible tallow

S. No.	Parameter	Requirement	Test method
i.	Relative density(at 40 ° C /water at 20 ° C)	0.894-0.904	TZS 1328
ii.	Refractive index,(ND 40 ° C)	1.448 - 1.460	TZS 1329
iii.	Saponification value, mg KOH/g oil	190 - 202	TZS 1325
iv.	Titre(° C)	40-49	TBS/AFDC 04(586) CD1
v.	Iodine value (Wij's), g/100	40– 53	TZS 1327
vi.	Unsaponifiable matter, g/kg, max.	12	TZS 1332
vii.	Fatty acids composition,% of total fatty acids	As in Annex A	TZS 288
viii.	Acid value, mg KOH/g, max	2.5	TZS 1331
ix.	Moisture and matter volatile at 105 ° C, % m/m, max.	0.3	TZS 1326
x.	Insoluble impurities, % m/m, max.	0.05	TZS 1336
xi.	Peroxide value, mEq peroxide- oxygen/kg oil, max	10	TZS 1324

4.3 Food additives

4.3.1 Edible tallow may contain food additives in accordance with CODEX STAN 192 and in subject to tables 2,3 and 4.

4.3.1.2 Antioxidant

Table 2 – Requirements for antioxidant in edible tallow

INS No.	Antioxidant	Requirements	Test method
304	Ascorbyl palmitate, mg/kg, max	500 (singly or in combination)	TZS 1775
305	Ascorbyl stearate , mg/kg, max		
307a	Tocopherol, d- <i>alpha</i> - , mg/kg, max	300 (singly or in combination)	TZS 1370
307b	Tocopherol concentrate, mixed , mg/kg, max		
307c	Tocopherol, dl- <i>alpha</i> , mg/kg, max		
310	Propyl gallate , mg/kg, max	100	TZS 1775
319	Tertiary butyl hydroquinone (TBHQ) , mg/kg, max	120	
320	Butylated hydroxyanisole (BHA) , mg/kg, max	175	TZS 1369
321	Butylated hydroxytoluene (BHT) ,mg/kg,max	75	
Any combination of gallates, BHA, BHT, and/or TBHQ , mg/kg, max		200 within individual limits	TZS 1775
322(i)	Lecithin	GMP	

4.3.1.3 Antioxidant synergists

Table 3 – Requirements for antioxidant synergists in edible tallow

INS No.	Antioxidant synergist	Requirements	Test method
330	Citric acid	GMP	TZS 1775
331(i)	Sodium dihydrogen citrate		
331(iii)	Trisodium citrate		
332(ii)	Tripotassium citrate		
333(iii)	Tricalcium citrate		
384	Isopropyl citrates , mg/kg, max	100 (Singly or in combination)	
472c	Citric and fatty acid esters		

	of glycerol , mg/kg, max		
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4.3.1.4 Antifoaming agents (deep frying oil)

Antifoaming agents specified in Table 4 may be used

Table 4 — Antifoaming agents

INS No.	Antifoaming agent	Requirements	Test method
900a	Polydimethylsiloxane, mg/kg, max	10	TZS 1775

5 Hygiene

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

6 Contaminants

6.1 Pesticide residues

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

6.2 Soap content

The **soap content shall not exceed 0.005%** when tested according to **TZS 1322**

6.3. Metals contaminants

Edible tallow shall comply with maximum limits established by Codex Alimentarius Commission as specified in Table 5.

Table 5– Limits of metal contaminants in edible tallow

Characteristics	Limit (Max),mg/kg	Test method
Iron (Fe)	1.5	TZS 1335
Copper (Cu)	0.1	TZS 1335
Lead (Pb)	0.1	TZS 268
Arsenic (As)	0.1	TZS 76

7 Sampling and Testing

7.1 Sampling

Sampling shall be carried out in accordance with TZS 54.

7.2 Testing

7.2.1 Testing shall be in accordance with TZS 1322 and as provided in the respective tables and Annexes of this Tanzania Standard.

8 Packing, marking and labeling

8.1 Packing

Edible tallow shall be packaged in containers made from suitable food grade material

8.2 Marking and labeling

Edible tallow containers shall be marked and labelled in accordance with TZS 538. In addition, each container shall be legibly and indelibly marked with the following information;

- a) Name of the product shall be 'Edible tallow'
- b) Name, physical and postal address of the manufacturer and/or packer
- c) Date of manufacture and expiry date
- d) Language-Kiswahili and/or English
- e) A complete list of ingredients in descending order of proportion
- f) Net content
- g) Batch number
- h) Manufacturers registered trade mark
- i) Country of origin
- j) The phrase "Place the products away from direct sunlight".
- k) Nutritional Information(optional)
- l) Disposal of used package

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

NOTE - The TBS Mark of Quality shall be used by the packers only under license from TBS. Particulars of conditions under which the licenses are granted, may be obtained from TBS.

ANNEX A
(normative)

fatty acids composition

Carbon configuration	Fatty acid composition(%)	Test method
C6:0	< 0.5 in total	TZS 288
C8:0		
C10:0		
C12:0		
C14:0	2-6	
C14:ISO	< 0.3	
C14:1	0.5-1.5	
C15:0	0.2-1.0	
C15:ISO	< 1.5 in total	
C15:ANTI ISO		
C16:0	20-30	
C16:1	1-5	
C16:ISO	< 0.5	
C16:2	<1.0	
C17:0	0.5-2.0	
C17:1	< 1.0	
C17:ISO	< 1.5 in total	
C17:ANTI ISO		
C18:0	15-30	
C18:1	30-45	
C18:2	1-6	
C18:3	<1.5	
C20:0	< 0.5	
C20:1	< 0.5	
C20:2	< 0.1	
C20:4	< 0.5	
C22:0	< 0.1	

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