



DRAFT TANZANIA STANDARD

Sausages — Specification Part 1: Raw or Cooked red meat Sausages

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Sausages — Specification Part 1: Red meat Sausages

0 FOREWORD

Sausage is a meat product obtained by stuffing meat and associated ingredients into casing. Sausage may be raw, cooked and /or smoked. It was found necessary to prepare this Tanzania standard due to an increased production and importation of Sausages in Tanzania.

This Tanzania standard has been prepared to ensure safety and quality of Sausages traded in the country.

In the preparation of this Tanzania, standard considerable assistance was drawn from KS 59-1:2017 *Sausage – Specification Part 1: Raw, cooked red meat sausages and sausage meat* published by the Kenya Bureau of Standards.

In reporting, the results of a test or analysis made in accordance with this standard, if the final value observed or calculated, is to be rounded off, it shall be done in accordance with TZS 4 (see clause 2).

1.0 SCOPE

This Tanzania standard specifies requirements, methods of sampling and test for red meat sausages from cattle, sheep, goats, pigs and other animals intended for human consumption.

2.0 REFERENCES

For the purpose of this Tanzania standard, the following references shall apply. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standards (including any amendments) applies:

TZS 4 – Rounding off numerical values.

TZS 76 – General method for determination of Arsenic silver diethyldithiocarmate photometric method.

TZS 110 – Abattoir design, Ante mortem and post mortem inspection of slaughtered animals, fresh meat and processed meat products – Code of hygiene,

TZS 118/ISO 4833, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Colony-count technique at 30°C

TZS 119 – Microbiology – General guidance for the enumeration of *coliforms* – Most Probable Number technique (MPN).

TZS 121, Microbiological examination for *Clostridium botulinum* and *Clostridium botulinum* toxins – Test method.

TZS 122 – Microbiology of food and animal feeding stuffs – Horizontal method for the detection of *Salmonella spp.*

TZS 125 – Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Technique using Baird-parker agar medium – Amendment 1: Inclusion of precision data.

TZS 131 – Microbiology - General guidance for enumeration of yeast and moulds – Colony count technique at 25 °C.

TZS 458 Code of hygiene for meat processing plant.

TZS 538 – Packaging and labelling of foods.

TZS 852-2 – Microbiology of food and animal feeding stuffs – Horizontal method for detection and enumeration of *Listeria monocytogenes* - Enumeration method

TZS 731 – Microbiology of food and feeding stuffs – Horizontal method for detection and enumeration of presumptive *Escherichia coli* – Most Probable Number Technique.

TZS 1760 /ISO 937 Meat and meat products – Determination of nitrogen content (Reference method).

Codex Stan 193 – Codex General Standard for Contaminants and Toxins in Food and Feed.

TZS 949-1 /ISO 21528-1, Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 1 – Detection and enumeration by MPN technique with pre-enrichment.

TZS 949-2/ISO 21528-2, Microbiology of food and animal feeding stuffs -- Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 2 – Colony count method.

TZS 1761/ISO 1443 Meat and meat products – Determination of total fat content.

ISO 1442 Meat and meat products – Determination of moisture content (Reference method)

ISO 936 Meat and meat products – Determination of total ash

CAC/RCP 58-2005, Code of hygienic practice for meat

ISO 4833, Microbiology of foods and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Part 2: Colony count technique at 30 °C

ISO 6579, Microbiology of food and animal feeding stuffs -- Horizontal method for the detection of *Salmonella* spp.

ISO 7251, Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive *Escherichia coli* — Most probable number technique

Codex Stan 192, General standard for food additives

3.0 TERMS AND DEFINITIONS

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

3.1 meat

all part of an animal that are intended for, or have been judged as safe and suitable for human consumption.

3.2 meat product

meat that has been subjected to processing irreversibly modifying its organoleptic and physicochemical characteristic.

3.3 food animals

gazetted animals that are wholesome and fit for human consumption.

3.4 ready to eat meat

products that are intended for human consumption that do not necessarily require further cooking.

3.5 offal's

parts of an animal such as blood, brain, heart, kidney, liver, pancreas, spleen, thymus, tongue and tripe, but excludes meat flesh, bone and bone marrow.

3.6 edible offal

offal's that are fit for human consumption.

3.7 flesh

the skeletal muscle of any slaughtered animal and any attached animal rind, fat, connective tissue, nerve, blood, blood vessels and skin.

3.8 fresh meat

meat that has not been subjected to any processing other than chilling, freezing, vacuum-wrapping or wrapping in a controlled atmosphere.

3.9 green weight

the weight of the raw article before addition of other substances or before drying.

3.10 minced meat

boneless meat that has been reduced into fragments/particles.

3.11 meat preparations

fresh meat or minced meat which has had foodstuffs, seasonings or additives added to it.

3.12 other products of animal origin; co-products

parts of animals that are unsuitable for human consumption when they are produced at the slaughterhouse, but which can later be processed for use in human food such as hides and skins (later processed into gelatine and collagen), sheep intestines processed into sausage casings, and omental fat processed into lard.

3.13 by-products

parts of a slaughtered animal which are not intended for human consumption.

3.14 casing

natural or artificial materials used to protect and or hold sausages

3.15 sausage meat

product of minced pork, beef, chevon, mutton/lamb or meat from suitable animals intended for red meat production, blended with or without spices and other seasonings.

3.16 sausage

product obtained by stuffing meat and associated ingredients like nuts, pulses and soya protein in casings and which may be fresh, fermented, cooked and/or smoked.

3.17 meat content

total amount of lean meat tissues and meat fat in the sausage.

3.18 fresh sausages /raw sausages

sausages made from meats that have not been previously cured and require chilling or freezing and thorough cooking before eating.

3.19 cooked sausages

sausages made with fresh meats and then fully cooked, intended to be either eaten immediately after cooking or refrigerated.

3.20 smoked sausages

sausages that are smoked and require to be refrigerated and cooked thoroughly before eating.

3.21 dry sausages

cured sausages that have been fermented and dried and can keep for a long time.

3.22 fermented sausages

sausages that have undergone microbiological fermentation and curing.

3.23 food grade material

material that is free from substances that are hazardous to human health and may be permitted to come in contact with food.

4.0 REQUIREMENTS

4.1 General requirements

4.1.1 Raw materials

- a) Raw materials approved red meat shall be wholesome and fit for human consumption and free from objectionable odours, flavours and blood clots, bones, tendons and any other contamination.
- b) Natural and edible collagen casings shall be wholesome, fit for human consumption, and free from defects such as holes, blisters, lacerations, parasitic, yeasts and fungal infestations and salt burns.
- c) All meat, including minced meat and meat preparations, used to produce sausages shall meet the requirements for fresh meat. Such meat shall have come from approved abattoirs/slaughterhouses and stamped with a health mark. The abattoirs/slaughterhouses shall comply with the requirements in TZS 110.
- d) Where fish is used as an ingredient, it shall be fit for fish for human consumption and conforming to relevant standards.

4.1.2 The following types of meat shall not be used in the production of sausages:

- a) genital organs of either female or male animals, except testicles;
- b) urinary organs, except the kidneys and the bladder;
- c) cartilage of the larynx, the trachea and the extra-lobular bronchi;
- d) eyes and eyelids;
- e) the external auditory meatus;
- f) horn tissue; and
- g) Scraps or waste that is inedible or unfit for human consumption such as meat containing bone fragments and skins shall not be used.

4.1.3 Curing ingredients

Ingredients may be used in curing of meat for sausage manufacture in accordance with Codex Stan 192.

4.1.4 Spices and seasonings

Spices and seasonings used for sausage manufacture shall be fit for human consumption and conform to relevant standards.

4.1.5 Water

Water used in the preparation of sausages shall conform to TZS 789/ EAS 12.

4.1.6 Optional ingredients

The following ingredients may be used in preparation or manufacture of sausages provided they are fit for human consumption:

- a) other products of animal origin;
- b) edible starch;
- c) cereals and cereal products;
- d) milk and milk products;
- e) sucrose, invert sugar, dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup);
- f) water soluble, aromatic hydrolyzed protein;
- g) vegetable protein products; and
- h) eggs and egg products.

4.1.7 Food additives

The food additives may be used in the sausages and shall be in accordance with the Codex Standard GSFA 192.

4.1.8 Red meat sausages;

4.1.8.1 Fresh sausages

- a) shall be prepared from one or more kinds of fresh or frozen meat flesh,
- b) shall be chilled or frozen and thoroughly cooked before eating, and
- c) except for breakfast sausages, shall not contain edible offals and other products of animal origin such as collagen, gelatine and rendered animal fats.

4.1.8.2 Smoked sausages;

- a) except for smoked pork sausages, shall contain no less than 65 % meat and not more than 30 % fat.
- b) shall contain no less than 65 % meat and not more than 35 % percent fat, and
- c) shall be smoked with only hard wood or other non-resinous materials.
- d) To facilitate chopping or mixing, water, or ice may be used in an amount not to exceed 3 % of the total ingredients used.

4.1.8.3 Cooked sausages

- a) Cooked sausages shall be prepared from one or more kinds of raw or cooked meat, seasoned and cured using one or more of the curing agents. They may or may not be smoked.
- b) Such products may contain raw or cooked edible offals and other products of animal origin individually or in combination, not in excess of 15 % of the total ingredients.
- c) The finished products shall not contain more than 30 % fat.
- d) Water or ice, or both, may be used to facilitate chopping or mixing or to dissolve the curing ingredients but the sausage shall contain no more than 10 % of added water.

4.1.8.4 Dry sausages

- a) Dry sausages shall be not more than 60 % of the green weight.
- b) Semi dry sausages shall be not more than 70 % of the green weight.

4.2 Specific requirements

Red meat sausages shall comply with the requirements specified in Table 1.

Table 1: Specific requirements for red meat sausages

S/N	Characteristic	Requirements		Test methods (See clause 2)
		Raw	Cooked	
1.	Total meat, %, min	50	65	
2.	Fat, %, max.	30	30	TZS 1761
3.	Moisture, %, max.	53	53	ISO 1442
4.	Total ash, %, max	3	-	ISO 936

4.3 Food additives

The permitted additives that may be added into Sausages shall be used to the level prescribed below.

- a) Sulphur dioxide, maximum 450ppm;
- b) Sodium nitrite maximum 200 ppm; and
- c) Permitted food colours.

Note: If there will be changes in the codex standards regarding the use of food additives in sausages/meat the new codex guidelines will prevail.

5.0 CONTAMINANTS

5.1 Raw or cooked red meat sausages shall comply with the requirements on maximum limits for heavy metals as prescribed in Table 2.

Table 2: Heavy metals requirements

S/N	Characteristic	Requirements	Test Method
1.	Mercury (Hg), mg/kg, max.	0.03	ICP/AAS
2.	Lead (Pb), mg/kg, max.	0.1	TZS 268
3.	Arsenic (As), mg/kg, max.	0.1	TZS 76
4.	Cadmium (Cd), mg/kg, max.	0.05	ICP/AAS
5.	Zinc (Zn), mg/kg, max.	5.0	ICP/AAS
6.	Iron (Fe), mg/kg, max.	5.0	ICP/AAS
7.	Copper (Cu), mg/kg, max.	0.4	ICP/AAS
8.	Tin (Sn), mg/kg, max.	250	ICP/AAS

5.2 Veterinary drug residues

Raw or cooked red meat sausages shall comply with the requirements on maximum allowable veterinary drug residue limits as prescribed in the CAC/MRL 2.

6.0 HYGIENE

6.1 Raw or cooked red meat sausages shall be prepared under strict hygienic conditions according to TZS 458 (See clause 2).

6.2 On testing, the sausages shall not contain microbiological count exceeding the requirements prescribed in Table 3.

Table 3: Microbiological requirements for red meat sausage

S/N	Characteristics	Requirements	Method of test (see clause 2)
1.	Total plate count, cfu/g, max.	10 ⁴	TZS 118
2.	Enterobacteriaceae, max.	10 ²	TZS 949 (Part 1 or 2)
3.	<i>Salmonella spp</i> /25 g	Absent	TZS 122
4.	<i>Escherichia coli</i> , MPN/g	Absent	TZS 731

5.	<i>Listeria monocytogenes</i>	Absent	TZS 852 (Part 2)
6.	<i>Clostridium botulium</i>	Absent	TZS 121
7.	<i>Staphylococcus aureus</i> , cfu/g	Absent	TZS 125 (Part 1)
8.	Yeast/moulds, cfu/ml, max.	10 ²	TZS 131

7.0 SAMPLING AND TESTS

7.1 Sampling

Sampling of the raw or cooked red meat sausages shall be done according to ISO 17604 (See clause 2).

7.2 Tests

Testing of this product shall be done according to test methods prescribed in Table 1,2 and 3.

8.0 PACKAGING, MARKING AND LABELLING

8.1 Packaging

In addition to the packaging and labeling requirements prescribed in TZS 538 (see clause 2), sausages shall not be exposed to direct sun or rain.

8.2 Marking and labelling

Sausages shall be marked and labeled in accordance with TZS 538 (see clause 2). In addition, each container shall be legibly and indelibly marked with the following information:

- a) Name of the product (of meat used) as appropriate;
- b) Country of origin;
- c) Declaration as either “raw”, “cooked” “smoked”;
- d) Declaration of method of drying;
- e) Declaration of preservatives used;
- f) Name and physical address of the manufacturer;
- g) Net Weight content;
- h) List of ingredients;
- i) Batch or code number;
- j) Date of manufacture shall be clearly shown on the container;
- k) Expiry date shall be clearly shown on the container;
- l) Instructions for use and storage;
- m) The language on the label shall be “Kiswahili” or Kiswahili and English. Additional language may be used depending on the designated market.

8.3 The container may also be marked with TBS Certification Mark.

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

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