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DRAFT TANZANIA STANDARD

Lamb and mutton carcasses and meat cuts – Specification

Draft standard for discussion-TBS

TANZANIA BUREAU OF STANDARDS

Lamb and mutton carcasses and meat cuts – Specification

0 FOREWORD

Sheep meat is locally produced in Tanzania. There is potential for the development of internal as well as external trade for sheep meat. The demand for sheep meat is increasing day by day because of richness in nutrients especially protein. The development of this standard is necessary to ensure that the products produced have the required safety and quality.

In the preparation of this Tanzania Standard substantial assistance was drawn from Gulf standard 996 – 1998 *Beef, Buffalo, Mutton and Goat Fresh Meat*.

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 (see clause 2).

1.0 SCOPE

This Tanzania Standard prescribes the requirements, methods of sampling and test for fresh and frozen lamb and mutton carcasses and meat cuts intended for human consumption.

2.0 REFERENCES

The following referenced standards are indispensable for the application of this draft standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standard (including any amendments) applies.

TZS 4, Rounding off numerical values

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

TZS 109, Food processing units - Code of hygiene

TZS 129, Meat and meat products – Microbiological examination – Sampling

TZS 131 /ISO 7954, Microbiology of food and animal feeding stuff – General guidance for enumeration of yeasts and moulds – Colony count technique at 25°C

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

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

TZS 125-1 /ISO 6888-1, 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 125-2 /ISO 6888-2, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci

(*Staphylococcus aureus* and other species) – Part 2: Technique using Rabbit Plasma Fibrinogen agar medium

TZS 183, Fresh meat in retail – Code of hygiene

TZS 268, General atomic absorption spectrophotometric method for determination of Lead in food and food stuffs

TZS 538, Labelling of pre-packaged foods — General requirements.

TZS 731 /ISO 7251, Microbiology of food and feeding-stuffs – Horizontal method for the detection and enumeration of presumptive *Escherichia coli* – Most Probable Number Technique

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 110, Ante mortem and post mortem inspection of slaughter animals, fresh meat and processed meat products – Code of hygiene

3.0 TERMS AND DEFINITIONS

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

3.1 abattoir/slaughter house

premises approved and registered by the controlling authority used for the slaughtering of sheep intended for human consumption

3.2 carcass

the body of sheep slaughtered according to Halal method, after bleeding and dressing in the abattoir

3.3 dressing

the removal of the hide or skin, viscera (including or not including heart, liver and kidney), genital organs urinary bladder, feet up to the carpal and tarsal joints and udders of lactating animals. It may or may not include removal of the head and splitting the carcass in the midline

3.4 meat

any edible part of an animal slaughtered for human consumption

3.4 yearling mutton

meat of male or female sheep of 12 to 18 months old

3.5 mutton

meat from male or female sheep over 12 months old, which has changed more than one set of primary teeth

3.6 mature mutton

meat of male (castrated and uncastrated) or female sheep that are over 20 months of age at the time of slaughter

3.7 Lamb

meat of young sheep of both sexes whose age is 4-12 months

3.8 meat cut

piece of meat separated from the carcass of an animal during butchering

3.9 fresh meat

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

4.0 REQUIREMENTS

4.1 General requirements

4.1.1 Lamb and mutton must originate from sheep slaughtered in establishments operating under applicable regulations according to TZS 183.

4.1.2 Such meat shall be obtained from sheep which have gone through ante mortem and post mortem inspections in accordance with TZS 110.

4.2 Specific requirements

Types of carcasses or mutton cuts.

4.2.1 Type A, Fresh Carcass

Carcass, delivered unrefrigerated showing no signs of deterioration.

4.2.2 Type B, Fresh Chilled carcass

Carcass chilled such that the temperature at the deepest portion of the flesh near the bone shall be 1 – 4 °C and showing no evidence of deterioration.

4.2.3 Type C, Fresh Frozen carcass

Lamb and mutton carcass initially chilled frozen solid (-18°C or below) when delivered and showing no evidence of deterioration.

4.2.4 Type D, Fresh Lamb and Mutton cuts,

- a) Legs
- b) Loins
- c) Racks
- d) Breasts
- e) Shanks
- f) Shoulders
- g) Chops

Note: These shall be prepared from fresh carcasses of type A. The lamb and mutton cuts shall be well trimmed and clean with surplus fat removed.

4.2.5 Type E, Fresh, Chilled Lamb and Mutton cuts,

These shall be obtained from carcasses of Type A and chilled (as listed under type D)

4.2.6 Type F, Fresh frozen lamb and mutton cuts,

These shall be obtained from the carcasses of Type A and frozen solid (as listed under type D). The cuts shall show no evidence of refreezing or deterioration.

4.3 Grading of mutton carcass and cuts

Mutton carcasses and cuts shall be graded as indicated in Annex B.

4.4 Characteristics of Lamb cuts for wholesale and retail

Mutton cuts in relation to wholesale and or retail cuts shall be characterized as described in Annex A.

4.5 Other requirements

4.5.1 Chilling

Lamb and mutton carcasses or cuts, meant for chilling should be brought to a temperature of about 4 °C at the deepest portion of the flesh within 12 hours. The chilled products should be consumed within 1 week.

4.5.2 Ageing

Lamb and mutton carcass may be aged for a period of 2 weeks at a temperature of 1- 4 °C.

4.5.3 Freezing and storage

4.5.3.1 Lamb and mutton carcasses, sides or cuts, shall be chilled before freezing at - 18 °C or lower within 24 hours.

4.5.3.2 Frozen lamb and mutton carcass, sides or cuts, shall be stored at - 18 °C or lower and the products shall be consumed within 9 months.

4.5.4 Stamping ink and stamping

4.4.4.1 Stamping ink used for inspection marks or grade marks shall be of food grade.

4.4.4.2 Grade designation marks on lamb and mutton carcasses or cuts shall be applied with a rubber stamp.

4.6 Transportation

Note: All fresh, chilled or frozen goat meat shall be moved in refrigerated transport and the packages shall be handled with due care to preserve the quality of the products.

5.0 CONTAMINANTS

5.1 Heavy metal contaminants

Mutton carcasses and cuts shall comply with the requirements for heavy metals prescribed in Table 1.

Table 1: Heavy metal requirements

S/N	Characteristic	Requirements	Method of test (see clause 2)
1.	Arsenic, mg/kg, max.	0.1	TZS 76
2.	Lead, mg/kg, max.	0.1	TZS 268
3.	Cadmium, mg/kg, max.	0.05	ICP/AAS
4.	Mercury, mg/kg, max.	0.03	ICP/AAS

5.2 Veterinary drug residues

Lamb and mutton carcass and meat cuts shall comply with veterinary drug residue limits as prescribed in the CAC/MRL 2.

6.0 HYGIENE

6.1 Lamb and mutton carcasses and meat cuts shall be produced and prepared under strict hygienic conditions according to TZS 109 and TZS 110 (See clause 2).

6.2 Lamb and mutton carcasses and meat cuts shall not contain microbiological counts exceeding requirements prescribed in Table 2.

Table 2: Microbiological limits for lamb and mutton carcasses and meat cuts

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.	Salmonella spp, /25 g	Absent	TZS 122
4.	<i>Esherichia coli</i> , MPN/g	Absent	TZS 731
5.	<i>Listeria monocytogenes</i>	Absent	TZS 852 (Part 1 & 2)
6.	<i>Clostridium botulinum</i>	Absent	TZS 121
7.	<i>Staphylococcus aureus</i>	Absent	TZS 125 (Part 1 or 2)
8.	Yeast/moulds, cfu/g, max.	10 ²	TZS 131

7.0 SAMPLING AND TESTS

7.1 Sampling

Sampling of lamb and mutton carcasses and meat cuts shall be done according to TZS 129 (see clause 2).

7.2 Tests

Testing of lamb and mutton carcass and meat cuts shall be done according to test methods prescribed in Tables 1 and 2.

8.0 PACKAGING, MARKING AND LABELING

8.1 Packing

In addition to packaging and labelling requirements prescribed in TZS 538 (see clause 2), mutton carcasses and cuts shall also be packed and transported as follows:

8.1.1 Chilled, frozen/deep-frozen meat cuts shall be wrapped in suitable food grade paper, polyethylene film or any other flexible food grade material and packed in cartons or any other approved containers.

8.1.2 Vacuum packed cuts shall be delivered intact.

8.1.4 The packages shall not be exposed to direct sun or rain.

8.2 Marking and labelling

Lamb and mutton carcasses and cuts shall be marked and labelled in accordance with TZS 538 (see clause 2). In addition, each container of lamb or mutton carcasses and cuts shall be legibly and indelibly marked with the following information:

- a) Name of the product;
- b) Type, class and grade of carcass or cut;
- c) Name and address of processor, packer or retailer/distributor;
- d) Batch or code number;
- e) Number of pieces;
- f) Net weight;
- g) Date of slaughter/packing;
- h) Expiry date;
- i) Country of origin;
- j) Storage and cooking instructions;
- k) .

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.

Annex A (Informative Appendix)

Appendix A - Mutton Carcass Grading and Requirements for Each grade

Items	Mutton				Lamb				Fat Lamb			
	Superior	Excellent	Good	Edible	Superior	Excellent	Good	Edible	Superior	Excellent	Good	Edible
Carcass Weight / kg	>25	22~25	19~22	16~19	>18	15~18	12~15	9~12	>16	13~16	10~13	7~10
Carcass Fatness	Backfat is 0.8~1.2 cm thick; fats at leg shoulder rich; muscle not revealed; rich marble patterns	Backfat is 0.5~0.8 cm thick; some fats at leg shoulder; leg muscle slightly revealed; obvious marble patterns	Backfat is 0.3~0.5 cm thick; some thin-layer fats at leg shoulder with its muscle slightly revealed; slightly obvious marble patterns	Backfat ≤0.3 cm thick; little fats at leg shoulder with muscle revealed; no marble patterns	Backfat >0.5 cm thick; some fats at leg shoulder; leg muscle slightly revealed; obvious marble patterns	Backfat 0.3~0.5 cm; some thin-layer fats at leg shoulder with its muscle slightly revealed; slightly obvious marble patterns	Backfat ≤0.3 cm thick; little fats at leg shoulder with muscle revealed; no marble patterns	Backfat ≤0.3 cm thick; little fats at leg shoulder with muscle revealed; no marble patterns	Eye of loin has slightly obvious marble patterns	No marble patterns	No marble patterns	No marble patterns
Rib Meat Thickness / mm	>14	9~14	4~9	<4	>14	9~14	4~9	<4	>14	9~14	4~9	<4
Firmness of Meat and Fats	Fats and muscle firm	Fats and muscle quite firm	Fats and muscle slightly firm	Fat and muscle soft	Fats and muscle firm	Fats and muscle quite firm	Fats and muscle slightly firm	Fat and muscle soft	Fats and muscle firm	Fats and muscle quite firm	Fats and muscle slightly firm	Fat and muscle soft
Meat Muscle Quality	Full-body skeletal structure not	Full-body skeletal structure not	Shoulder bulge area and neck	Shoulder bulge area and neck	Full-body skeletal structure not	Full-body skeletal structure not	Shoulder bulge area and neck	Shoulder bulge area and neck	Full-body skeletal structure not	Full-body skeletal structure not	Shoulder bulge area and neck	Shoulder bulge area and neck

revealed; leg area plump and full; muscle bulge obvious; back wide and flat; shoulder thick and full	revealed; leg area quite plump and full; muscle bulge quite obvious; back and shoulder quite thick and full	area spine tip protrudes slightly; leg area not plump; no muscle bulge; back and shoulder quite narrow and thin	area spine tip protrudes slightly; leg area skinny with hollows; back and shoulder narrow and thin	revealed; leg area plump and full; muscle bulge obvious; back wide and flat; shoulder thick and full	revealed; leg area quite plump and full; muscle bulge quite obvious; back and shoulder quite thick and full	area spine tip protrudes slightly; leg area not plump; no muscle bulge; back and shoulder quite narrow and thin	area spine tip protrudes slightly; leg area skinny with hollows; back and shoulder narrow and thin	revealed; leg area plump and full; muscle bulge obvious; back wide and flat; shoulder thick and full	revealed; leg area quite plump and full; muscle bulge quite obvious; back and shoulder quite thick and full	area spine tip protrudes slightly; leg area not plump; no muscle bulge; back and shoulder quite narrow and thin	area spine tip protrudes slightly; leg area not plump; no muscle bulge; back and shoulder quite narrow and thin	area spine tip protrudes slightly; leg area not plump; no muscle bulge; back and shoulder quite narrow and thin
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Physiological Maturity	At least one joint of control at front calf, ribs broad and flat	At least one joint of control at front calf, ribs broad and flat	At least one joint of control at front calf, ribs broad and flat	At least one joint of control at front calf, ribs broad and flat	Fractured joints at front calf; fractured joints moist with bright red colour; rib quite round	Front calf may have joints of control or fractured joints; ribs slightly broad and flat	Front calf may have joints of control or fractured joints; ribs slightly broad and flat	Front calf may have joints of control or fractured joints; ribs slightly broad and flat	Fractured joints at front calf; fractured joints moist with bright red colour; rib quite round	Fractured joints at front calf; fractured joints moist with bright red colour; rib quite round	Fractured joints at front calf; fractured joints moist with bright red colour; rib quite round	Fractured joints at front calf; fractured joints moist with bright red colour; rib quite round
Colour and Lustre of Meat and Fats	Muscle dark red; Fats milky white	Muscle dark red; Fats white	Muscle dark red; Fats pale yellow	Muscle dark red; Fats yellow	Muscle dark red; Fats milky white	Muscle dark red; Fats white	Muscle dark red; Fats pale yellow	Muscle dark red; Fats yellow	Muscle dark red; Fats milky white	Muscle dark red; Fats white	Muscle dark red; Fats pale yellow	Muscle dark red; Fats yellow

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ANNEX B (Informative Appendix)

Appendix B - Characteristics of Lamb cuts for wholesale and retail

Wholesale	Retail cuts	Characteristics
Leg	Frenched leg	Shank bone is “frenched”, that is, meat is removed to expose 2.5 cm or more of lower end of shank bone.
	American leg	Shank meat is removed at stifle joint. Shank meat is tucked into pocket under fell and pinned into place.
	Half of leg	Either the shank half or the loin half
	Leg chops (steaks)	May contain cross section of backbone and aitchbone. Centre cut steaks look like miniature beef round steaks.
	Sirloin chops	Correspond to beef sirloin steaks. Pinbone chops have considerable bone.
	Boneless sirloin roast	Small boneless roll weighing from 1 to 1.75 kg
Loin	Loin roast	Corresponds to beef short loin. It can be the unsplit loin but is usually one side of the split loin.
	Rolled loin roast	Boned and rolled loin
	Loin chops	Contain T-shaped bones; correspond to porter-house, T-bone, and club beef steaks.
	English chops	Cut across the unsplit loin. Backbone removed and boneless chop
Rack	Rib (rack) roast	Contains rib bones and rib eye muscle.
	Crown roast	Ribs are ‘frenched’, that is, meat is removed from rib ends, then two or more rib sections are shaped and tied into a ‘crown’ Contain rib bone and rib eye muscle.
	Frenched chops	Same as rib chops except meat is removed from ends of ribs.
shoulder	Square-cut shoulder	Thickest part of forequarter, with shank, breast rib (rack), and neck removed.
	Cushion	Boned and left flat. Sewed on two sides. One side

	shoulder	may be left open for stuffing, then skewered or sewed.
	Rolled shoulder	Boneless roll made from square -cut shoulder.
	Boneless shoulder	Cut from boneless rolled shoulder.
Chops	Mock duck	Made from outside of shoulder. Shaped like a duck.
	Arm chops	Contain small round bone and usually the cross-sections of 4 or 5 rib bones.
	Blade chops	Contain portions of rib, back and blade bones.
	Saratoga chops	Boneless chops made from the inside shoulder muscle.
	Neck slices	Round slice with neck vertebrae in center.
Breast	Breast	Corresponds to veal breast and to short plate and brisket of beef. Narrow strip of meat containing breast bone and ends of 12 ribs.
	Breast with pocket	Same as above but with pocket between ribs and lean.
	Rolled breast	Small boneless roll. Alternating layers of lean and fat.
	Riblets	Breast bone removed and breast cut between ribs. Each small piece contains part of a rib bone.
Shank	Shank	Contain shank and elbow bones.

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