DRAFT KENYA STANDARD **DKS 2722 : 2016**

ICS 67.120

Rabbit meat – Specification

PUBLIC REVIEW DRAFT, MARCH 2017

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Ministry of Trade, Industry and Cooperatives
Ministry of Health- food safety unit
Kenya Industrial Research and Development Institute
National Public Health Laboratories
Government Chemist's Department
Farmer's Choice (K) Ltd.
University of Nairobi — Department of Food Science and Technology
Consumer Information Network
Kenchic (K) Ltd.
Alpha Fine Foods Ltd.
Meatons Kenya Limited
Kenya Meat Commission
Pareto Group (K) Ltd
Directorate of livestock Production
Directorate of Veterinary Services
Quality Meat Packers
Choice meats
Lemoc limited
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya standards shall be regularly reviewed. Suggestions for improvement to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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KENYA STANDARD

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KENYA BUREAU OF STANDARDS (KEBS)

Head Office: P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax: (+254 020) 604031
E-Mail: info@kebs.org, Web:http://www.kebs.org

Coast Region
P.O. Box 99376, Mombasa-80100
Tel.: (+254 041) 229563, 230939/40
Fax: (+254 041) 229448

Lake Region
P.O. Box 2949, Kisumu-40100
Tel.: (+254 057) 23549, 22396
Fax: (+254 057) 21814

Rift Valley Region
P.O. Box 2138, Nakuru-20100
Tel.: (+254 051) 210553, 210555

Foreword

This Kenya Standard was prepared by the Meat and Meat Products Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

The preparation of the second edition of the standard was found necessary so as to align the microbiological requirements, heavy metal limits and Minimum Residue Levels for pesticides and veterinary drugs residue with the current advances in science.

During the preparation of this standard, reference was made to the following documents:

UNECE standard for Rabbit meat: carcasses and meat cuts

Codex Alimentarius Commission Standard, Meat and Meat products Volume 10 1994.

Meat Control Act cap 356 of the Laws of Kenya.

The Food, Drugs and Chemical Substances Act, Cap 254 of the Laws of Kenya.

International Commission on Microbiological Specifications for Foods - Micro-organisms in Foods, Book 8.

The assistance derived from the above sources is highly acknowledged.

KENYA STANDARD

RABBIT MEAT- SPECIFICATION

1. SCOPE

This Kenya Standard specifies quality requirements, safety requirements; methods of analysis and sampling of rabbit carcasses and cuts meant for human consumption. The standard also defines major portions of meat cuts from the carcasses for sale.

2 Normative references

The following referenced documents are indispensable for the application 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

I. *KS EAS 39 - Hygiene in the food and drink manufacturing industry - Code of practice.*
II. *KS ISO 22000 Food safety management systems - Requirements for any organization in the food chain.*
III. *KS EAS 151 - Hazard analysis critical control points (HACCP).*
IV. *KS 2299 Code of practice for Ante-mortem and post-mortem inspection of meat animals.*
V. *KS CAC/MRL 2- Maximum Residue Limits for Veterinary Drugs in Food*
VI. *KS EAS 38 - Labelling of pre-packaged foods*
VII. *KS ISO 4832 — Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coliforms — Colony-count technique.*
VIII. *KS ISO 16649-2 Microbiology of food and animal feeding stuffs -— Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide.*
IX. *KS 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.*
X. *KS ISO 6579 Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*
XI. *KS ISO 7937 Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique.*
XII. *KS ISO 11290 - 1 Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and other Listeria spp. -- Part 1: Detection method*
XIII. *KS CAC/RCP 58-2005, Codex code of hygienic practice for meat.*
XIV. *KS EAS 12 - Specification for potable water*
XV. *KS ISO 17604 Microbiology of food and animal feeding stuffs- carcass sampling*
XVI. *KS ISO/TS 17728 Microbiology of food and animal feeding stuffs- sampling techniques for microbiological analysis of foods and feeds.*
XVII. *KS ISO 16654 Microbiology of food and animal feeding stuffs- Horizontal method for the detection of Escherichia coli 0157:H7*

3 DEFINITIONS

For the purpose of this standard the following definitions shall apply:

3.1 Rabbit meat – all parts of a rabbit that are intended for, or have been judged as safe and suitable for human consumption.

3.2 Boning- means the;
a) Removal of meat from bones of a carcass or a portion of carcass
b) Production of bone-in meat cuts or
c) Production of boneless meat cuts
Boning does not include the production of meat fractions and mechanically separated meat.

3.3 Contamination- the presence of objectionable matter including substances or microorganisms that makes meat unwholesome.

3.4 Dressing – means the removal of head, hide or skin, viscera (including or excluding the kidneys) genital organs, bladder, feet up to the carpal and tarsal joints and for lactating female animals, the mammary glands.

3.5 Meat – the edible part of any rabbit and edible offal.

3.6 Carcass — the body of any slaughtered animal after bleeding and dressing.

3.7 Dressed or dressing — The removal of head, hide or skin, viscera, genital or gums, urinary bladder and feet up to the carpal and tarsal joints and udder of lactating animals that have farrowed or are in advanced pregnancy and where necessary splitting of the carcass lengthwise.

3.8 Conformation - is the overall thickness of muscle and fat in relation to the size of an animal's skeleton, i.e. the "shape" of the carcass profile and degree of muscularity.

3.9 Eating quality - refers to the organoleptic factors influencing consumer acceptance and enjoyment of the product. The main eating quality attributes of meat are tenderness, succulence, flavor(taste and aroma).

3.10 Carcass weight – is the weight (kg) of the dressed body of an animal at the end of the slaughter line.

3.11 Piece weight - is a whole carcass, quarters, or a cut as specified by the product description. Piece weight shall not include the weight of packaging materials.

4. GENERAL REQUIREMENTS

4.1 Rabbits shall be slaughtered in a hygienically managed slaughter-house. The slaughter shall be supervised by a competent authority and shall be prepared in licenced premises.

4.2 The meat used for preparing rabbit meat shall be obtained from rabbits which have been slaughtered according Meat control Act cap 356 and shall be in compliance with KS 2299.

4.3 When inspected and analysed using appropriate methods, rabbit cuts and carcasses shall be free from infectious parasites.

4.4 Cutting, trimming and boning of cuts shall be accomplished with sufficient care to maintain cut integrity and identity and to avoid scores in the lean. Ragged edges shall be removed close to the lean surfaces. Except for cuts that are separated through natural seams, all cross-sectional surfaces shall form approximate right angles with the skin surface. Minimal amounts of lean, fat, or bone may be included on a cut from an adjacent cut. For boneless cuts, all bones, cartilage, and visible surface lymph glands shall be removed.

5 HYGIENE REQUIREMENTS

5.1 Rabbit carcasses and cuts shall be prepared, handled and stored in accordance with the appropriate sections of the;

a) Food, Drugs and Chemical Substances Act Cap 254,
b) Public Health Act CAP 242,
c) Meat Control Act, Cap. 356 of the Laws of Kenya*,*
d) *KS EAS 39 - Hygiene in the food and drink manufacturing industry - Code of practice,*
e) KS *ISO 22000: 2005 Food safety management systems - Requirements for any organization in the food chain,*
f) KS EAS 151 - Hazard analysis critical control points,
g) KS 2299 Code of practice for Ante-mortem and post-mortem inspection of meat animals and
h) KS CAC/RCP 58 *Codex code of hygienic practice for meat.*

5.2 All food handlers shall use appropriate personal protective equipment that does not contaminate the product.

5.3 All food handlers shall undergo a food handlers test before their deployment, and every six months thereafter.

6 QUALITY CHARACTERISTICS OF RABBIT MEAT

6.1 Carcasses and cuts must be:

a. Intact, taking into account the presentation
b. Free from visible blood clots or bone dust
c. Free from any visible foreign matter (e.g. dirt, wood, plastic, metal particles)
d. Free of offensive odours
e. Free of obtrusive bloodstains
f. Free of unspecified protruding or broken bones
g. Free of contusions
h. Free of freezer-burn
i. Free of spinal cord (except for whole unsplit carcasses)
j. Free from fur

6.2 Grading carcasses

6. 2.1 For the purpose of this standard, the rabbit category shall be determined as follows:

Table 1: Grading Table

Category	Description
Very young rabbit	Bunnies can be weaned as soon as they are out of the nest box and eating the doe' s feed or eating feed from a creep feeder. Weaning time will vary between breeds but can range from four to five weeks.
Young rabbit	Less than 12 weeks of age
Young mature rabbit	12 weeks to 6 months of age
Mature rabbit	More than 6 months of age
Open doe	More than 6 months of age, unfertilized mature rabbit
Other	Can be used to describe any other category of rabbit

7. PREPARATION OF RABBIT CARCASSES AND CUTS

Rabbit carcasses shall be properly dressed, washed, butchered, trimmed, weighed, properly packaged and labelled and shall be free from bruises or blemishes of any kind. They shall also be neatly trimmed with head, feet, and all offal removed.

7.1 **Temperature treatment –** rabbit carcasses and cuts shall be subjected to the following temperature treatment.

7.1.1 **Chilling -** Fresh rabbit carcasses sides or cuts shall be brought to a temperature of between 1 ºC and 3 ºC within 24 hours. Carcasses and cuts meant for chilling shall be further chilled to temperatures of -2 ºC to 4 ºC and should be consumed within a period of 4 weeks.

7.1.2 **Freezing and Storage -** The rabbit carcasses sides or cuts shall be pre-chilled before freezing. Freezing shall be at minus (-) 18 ºC and (-) 12 ºC at the highest. The rabbit carcasses and cuts shall be stored at (-) 12 ^{o}C at the highest. The frozen product shall be consumed within 12 months

7.2 Rabbit carcass and cuts may be presented according to the following in relation to temperature treatment:

7.2.1 **Fresh Carcass** -The deepest part of the carcass near the bone shall be cooled to the atmospheric temperature when delivered and shall show no evidence of deterioration.

7.2.2 **Fresh, Chilled Carcass -** The carcass shall be chilled so that the temperature at the deepest portion of the flesh near the bone shall be 1°C and shall show no evidence of deterioration.

7.2.3 **Fresh, Frozen Carcass** -The rabbit meat shall be quick frozen preferably at a temperature of not higher than -12^{o}c for frozen and -18^{o}c for deep frozen in the minimum possible time and shall show no evidence of deterioration, such as dehydration, oxidative rancidity and advanced changes in texture.

7.2.4 **Rabbit meat cuts, fresh** -These shall be prepared from carcasses which conform to the requirements given in fresh carcass**.**

8 RABBIT CARCASSES AND CUTS

8.1 The rabbit cuts and portions may be presented as shown in annex 1 ;

9. MICROBIOLOGICAL REQUIREMENTS

9.1 It is recommended that all necessary measures required for maintaining a hygienic environment throughout the food chain (production, handling, and marketing) are established to ensure provision of safe food for human consumption.

9.2 Samples shall be taken in accordance to the provisions of *KS ISO 17604 and KS ISO/TS 17728*

9.3 Rabbit cuts shall comply with the microbiological requirements given in Table 2.

Table 2 — Microbiological limits for Rabbit carcasses and cuts

SL No.	Micro-organism	Max. limits	Test method
i.	Aerobic colony count CFU/g	10^6	KS ISO 4833-1
ii.	E. coli per g	10^2	KS ISO 16649-2
iii.	*Coagulase positive Staphylococcus aureus*, per g	10^2	KS ISO 6888-1
iv.	Salmonella,	Absent in 25 g	KS ISO 6579
v.	*Listeria monocytogenes*	Absent in 25 g	KS ISO 11290-1
vi.	*Camphylobacter*	Not detected	KS ISO 10272-1
vii.	*Enterobacteriacea*	10^3	KS ISO 21528

10 RESIDUES OF VETERINARY DRUGS AND PESTICIDES

10.1 The products covered by this standard shall comply with the maximum residue limits specified *in KS CAC/MRL 2- Maximum Residue Limits for Veterinary Drugs in Food.* When analyzed using the appropriate approved methods, the products shall not contain any veterinary drug residue above the approved limits.

11 LIMITS FOR HEAVY METAL CONTAMINANTS

11.1 rabbit meat cuts shall not contain heavy metal contaminants in excess of the limits given in Table 3 when tested by methods mentioned.

Table 3 — Heavy metal contaminants limits for Rabbit meat cuts

SL No.	Contaminants limits	Maximum limits Ppm	Test methods
I.	Arsenic (Ar)	0.1	AOAC 986.15 EN14332, 14627
II.	Lead (Pb)	0.1	AOAC 999.10, 999.11, 986.15 EN14082, 14083,14084
III.	Cadmium	0.05	AOAC 986.15, 999.11,973.34 EN 14082,18083,14084
IV.	Mercury	0.03	AOAC 971.21

12. PACKAGING AND LABELLING

12.1 Packaging

12.1.1 Packaging of Fresh, chilled and frozen products shall be done in food grade packaging materials that protect the meat product from any physical, microbiological, chemical or any other type of contamination during storage, distribution and handling.

12.1.2 Vacuum-packed cuts shall be delivered intact.

12.2 Labelling

12.2.1 The labeling, promotion and presentation of a material or article shall not mislead the consumers.

12.2.2 Labelling of packages of lamb and mutton carcasses and cuts shall be done in accordance with the requirements stipulated in KS *EAS 38, Labelling of pre-packaged foods)* and shall include the following:

a) name of the product

b) name, location and address of manufacturer;

c) net weight, in g or kg;

d) date of production/packaging;

e) expiry date;

f) batch number;

g) storage conditions;

h) country of origin

i) Approval veterinary stamp mark for cuts

ANNEX 1: RABBIT MEAT CUTS AND PORTIONS

The Rabbits meat cuts are as indicated below;

Carcass
A carcass includes the whole body skeletal musculature and bone extending to and including the hock joint (tarsus) and knee joint (carpus), without the head. Kidneys retained or removed.

Side
Side is prepared from a carcass. The neck is removed by a cut made between the 7th cervical vertebra and the 1st thoracic vertebra. The carcass is split into sides by one longitudinal cut made centrally down the sacral, lumbar, thoracic vertebra.

Trunk
Trunk is prepared from a carcass by a straight cut through the 6th lumbar vertebrae to just clear the tip of the ilium to the ventral portion of the flap.
To be specified:
- Diaphragm retained or removed.
- Kidneys retained or removed.
- Kidney fats partially or completely removed.
- Head and neck is retained or removed.
- Heart and lungs retained or removed

Leg pair and saddle
Leg pair and saddle is prepared from a carcass by the removal of the following portions:
Breast and flap are removed by a straight cut parallel on each side and measured from the dorsal edge and commencing from the junction of the 1st rib (sternum) to the reflection of the diaphragm at the 11th rib and following on through the flap to the superficial inguinal lymph node.

Trunk
The neck is removed by a straight cut parallel and cranial to the 1st rib and through the junction of the 7th cervical and 1st thoracic vertebrae.

To be specified:
- Shank tipped.
- Flap retained or removed.
- Shoulder retained or removed.
- Leg tendon retained or removed.
- Number of ribs required.
- Kidney and channel fats retained, partially or completely removed.
- Scapular cartilage retained or removed.
- Rib numbers to be frenched and length of frenching required.
- Surface fat trim level.
- The rib ends are frenched to a distance as specified from the ventral edge.

Trunk without legs
Trunk is prepared from a carcass by a straight cut through the 6th lumbar vertebrae to just clear the tip of the ilium to the ventral portion of the flap.

To be specified:
- Diaphragm retained or removed.
- Kidneys retained or removed

Kidney fats partially or completely removed.
- Front legs are removed.
- Neck is retained or removed.

Saddle
Saddle is prepared from a leg pair and saddle (item 0202) by the removal of the leg pair by a cut through the 6th lumbar vertebrae to the tip of the ilium continuing to the ventral portion of the flap. The ribs and flap on both sides of the saddle are cut parallel at a specified distance from the (cranial) end.

Leg pair
Leg Pair is prepared from a carcass by a straight cut through the 6th lumbar vertebrae to clear the tip of the ilium to the ventral portion of the Flap.

To be specified:
- Leg tendon retained or removed.
- Shank tipped.
- Flap retained or removed.
- Tail removal point.
- Channel fat retained, partially or completely removed.
- Butt Tenderloin retained or removed.
- Surface fat trim level.

0206 Forequarter
Cranial portion from the side (0101), prepared by a transversal cut made to the column vertebra at the 12th rib and the first lumbar vertebra.
To be specified:
● Forequarter to consist of 11 ribs
● Diaphragm removed
● Spinal cord removed

Hindquarter
Caudal portion from the side (0101), prepared by transversal cut made through the vertebral column between the 12th rib and the 1st lumbar vertebra.
To be specified:
● Hindquarter to consist of 1 rib
● Diaphragm removed
● Kidney - kidney fats removed
● Tail removed at the sacrococcygeal junction
● Spinal cord removed

Leg - chump off
Leg - Chump Off is prepared from a hindquarter by the removal of the chump by a cut at right angles across the Leg at a specified measured distance from the acetabulum.
To be specified:
● Tail removal point.
● Sacrum retained or removed.
● Shank tipped.
● Leg tendon retained or removed.
● Channel fat retained, partially or completely removed.
● Chump cutting lines (cranial) to acetabulum.
● Surface fat trim level.

Fore leg
Fore leg is prepared from a straight cut across the backbone at the eighth or ninth thoracic vertebra. The legs are divided by lengthwise cut along the backbone to produce two approximately equal halves**.**

Foreshank
Foreshank is prepared from a Forequarter and consists of the radius, ulna, carpus and distal portion of the humerus bones and associated muscles.
To be specified:
● Carpus retained.
● Separated by saw cut or broken joint.

Hindshank
Hindshank is prepared from a leg and consists of the tibia, tarsus and calcaneal tuber bones and associated muscles. The hindshank is removed from the
Leg by a cut parallel to the Chump removal cutting line through the heel muscle of the
Silverside, through the stifle joint separating the tibia and the femur.
To be specified:
● Tarsus retained.
● Heel muscle retained or removed.
● Leg tendon retained or removed.
● Separated by saw cut or broken joint.

Hindshank cuts
Cuts are prepared from Hindshank by a cut parallel to the chump removal cutting line.

Loin
Loin is prepared from a side (0102) by the removal of the forequarter along the contour of the specified rib and by a cut at right angles severing the thoracic vertebrae. The leg is removed by a cut parallel to the Forequarter removal line and passing through the junction of lumbar sacral vertebrae to clear the tip of the ilium. The breast and flap are removed at the specified distance from the ventral edge of the eye muscle by a cut parallel to the backbone (measured from the cranial end).

Quarters set
Quarters set consists of the primals cuts from the forequarter or hindquarter.
To be specified:
● Refer each item number for specification details.

Five-piece cut-up
A “five-piece cut-up” is prepared from a carcass (0101) by cutting it into 2 forelegs, 2 hind legs, and 1 loin with whole breast, back and rib portions.

Boneless rack
Boneless rack is prepared from a carcass (0101) by removing forelegs and hind legs and all bones.

Boneless loin
Boneless loin is prepared from boneless rack by a cutting along with the midline.

Striploin
Striploin is prepared from a (0 rib) Hindquarter by a cut made at the lumbo sacral junction and that portion of the M. longissimus dorsi muscle attached to and along the edge of the (1st to 6th) lumbar vertebra. The flank (tail) is removed at the eye of meat at the junction of the 12th rib and parallel to the 1st lumbar vertebra.
To be specified:
● The distance of flank removal from eye of meat
● Obtained from the hindquarter to consist of 1 rib

Boneless saddle
Boneless saddle is prepared from a carcass and consists of the eye muscle lying along the spinous process and transverse processes of the lumber, thoracic and cervical vertebrae.
To be specified:
● Silverskin removed or retained.
● Muscle length by indicating the removal point along the vertebrae.

Backstrap
Backstrap (long) is prepared from a side and consists of the eye muscle lying along the spinous process and transverse processes of the lumber, thoracic and cervical vertebrae. The backstrap comprises of the portion commencing from the 1st cervical vertebrae to the lumbar sacral junction.

To be specified:
● Silverskin removed or retained.
● Muscle length by indicating the removal point along the vertebrae.

Tenderloin
Tenderloin is prepared from the side by removing the muscles in one piece from the ventral surface of the lumbar vertebrae and lateral surface of the ilium. The side strap (*M. psoas minor*) remains attached.

To be specified:
● Sidestrap (*M. psoas minor*) retained or removed.
● Surface fat trim level

Eye of short loin
The eye of short loin is prepared from backstrap and comprises of the portion commencing at the 10th thoracic vertebrae to the junction of lumbar sacral vertebrae.

To be specified:
● Silverskin removed or retained.
● Muscle length by indicating the removal point from the lumbar and thoracic vertebrae.

Rabbit bag
Rabbit bag is prepared from boneless rack by folding neck meat and loin inward and then put in a bag shape.