

# **Carcasses and meat cuts — Specification**

Part 4:  
**Camel**

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Kenya Agricultural and Livestock Research Organization (KARLO)  
International Livestock Research Institute (ILRI)  
Ministry of Industry, Trade and Cooperatives  
Ministry of Health – Food safety unit  
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National Public Health Laboratories Services  
Government Chemist's Department  
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Farmer's Choice (K) Ltd.  
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Directorate of Veterinary Services  
Quality Meat packers  
Choice Meats Ltd.  
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## **Part 4: Camel**

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# KS 317-4:2019

## 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 this 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:

CAC/RCP 58-2005, Codex code of hygienic practice for meat.

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.

Acknowledgement is hereby made for the assistance derived from these sources.

## Carcasses and meat cuts — Specification

### Part 4: Camel

#### 1 Scope

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

#### 2 Normative references

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.

KS 2299, *Ante-mortem and post-mortem inspection of meat animals — Code of practice*

KS EAS 12, *Potable water — Specification*

KS EAS 38, *Labelling of pre-packaged foods — General requirements*

KS EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

KS CAC/MRL 2, *Maximum residue limits for veterinary drugs in food*

CAC/RCP 58, *Codex code of hygienic practice for meat*

EAS 151, *Hazard Analysis Critical Control Points (HACCP)*

KS ISO 4833 (all parts), *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms*

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

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.*

KS ISO 11290 -1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 1: Detection method*

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.*

KS ISO 18593, *Microbiology of food and animal feeding stuffs — Horizontal methods for sampling techniques from surfaces using contact plates and swabs*

KS ISO 22000, *Food safety management systems — Requirements for any organization in the food chain*

ISO 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique*.

AOAC 971.21, *Mercury in food — Flameless atomic absorption spectrophotometric method*

AOAC 973.34 *Cadmium in food — Atomic absorption spectrophotometric method*

AOAC 986.15 *Arsenic, Cadmium, Lead, Selenium, and zinc in human and pet foods — Multielement method*

AOAC 999.10, *Lead, Cadmium, Zinc, Copper, and iron in foods — Atomic absorption spectrophotometry after microwave digestion*

AOAC 999.11, *Lead, Cadmium, Copper, Iron, and zinc in foods — Atomic absorption spectrophotometry after dry ashing*

### 3 Terms and definitions

For the purposes of this standard, the following terms and definitions shall apply.

#### 3.1

##### **carcass**

the body of any slaughtered animal after bleeding and dressing

#### 3.2

##### **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 calved or are in advanced pregnancy and where necessary splitting of the carcass lengthwise

#### 3.3

##### **splitting**

dividing the carcass lengthwise into two sides

#### 3.4

##### **carcass weight**

is the weight (kg) of the dressed body of an animal at the end of the slaughter line

##### 3.4.1

##### **Hot Dressed Weight (HDW)**

is the weight (kg) of the dressed body of an animal (carcass) at the end of the slaughter line within 1 h of slaughter

##### 3.4.2

##### **Cold Dressed Weight (CDW)**

is the weight of the carcass following chilling; also called cold carcass weight

#### 3.5

##### **ageing**

is the holding of carcasses or primal joints at refrigerated temperatures 0 °C to 4 °C to improve eating quality (particularly tenderness and flavour)

#### 3.6

##### **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

#### 3.7

##### **eating quality**

refers to the organoleptic factors influencing consumer acceptance and enjoyment of the product. The main eating quality attributes of meat are tenderness, juiciness, flavour and aroma

**3.8****grading**

is the categorization of a carcass according to quality standards

**3.9****bull**

a male camel

**3.10****cow**

female camel

**3.11****heifer**

female camel that has not calved

**3.12****steer**

castrated male camel of up to 6 years of age

**3.13****bullock**

castrated male camel over 6 years of age

**3.14****camel veal**

is meat of a calf, of either sex of up to 9 months of age

**3.15****wet ageing** (wet aged meat)

is meat that has typically been aged in a vacuum sealed bag to retain its moisture

**3.16****dry ageing** (dry aged meat)

is meat that has been hung or placed on a rack to dry for a specified amount of time. Is the process by which carcasses and meat cuts are aged by being hanged or placed on a rack to dry for several days or weeks (specified amount of time)

**3.17****primal cuts**

are pieces of meat initially separated from the carcass of an animal during butchering

**3.18****camel**

a camel is an even-toed ungulate with padded feet in the genus *Camelus*, bearing distinctive fatty deposits known as "humps" on its back. There are two domesticated species of camel, which are: the dromedary, or one-humped camel (*C. dromedarius*), which inhabits the Middle East and the Horn of Africa; and the *Bactrian*, or two-humped camel (*C. bactrianus*), which inhabits Central Asia

**4 General requirements**

**4.1** Camel from which meat is derived shall be slaughtered in a hygienically managed slaughter house. The slaughter shall be supervised by a competent authority. The animals and carcasses thereof shall be subjected to ante-mortem and post-mortem veterinary inspection as prescribed in the Meat Control Act, Cap. 356 of the Laws of Kenya and shall comply with KS CAC/RCP 58.

**4.2** The inspected carcasses shall bear suitable marks of such inspection, the symbol and/or number of the establishment where they were prepared. The marking ink used shall be food grade and shall be approved by the competent authority.

**4.3** The camel meat shall be prepared in a plant which is regularly operated under supervision of the competent authority.

**4.4** The camel meat shall be prepared, handled fresh or chilled or frozen, and then delivered fresh or chilled or frozen, under hygienic conditions.

## **5 Preparation of camel carcasses and cuts**

### **5.1 General**

Camel carcasses and cuts shall be neatly butchered, trimmed, weighed, properly labelled and shall be free from bruises or blemishes of any kind. They shall be delivered in good condition and shall show no evidence of deterioration at the time of delivery.

### **5.2 Chilling**

Fresh camel carcasses sides shall be pre-chilled to temperatures of between 4 °C and 7 °C within 24 h. Carcasses and cuts meant for chilling shall be further chilled to temperatures of minus (-) 2 °C to 4 °C and should be consumed within a period of 4 weeks.

### **5.3 Freezing and storage**

**5.3.1** The camel carcasses sides or cuts shall be pre-chilled before freezing and the freezing shall be at temperatures between minus (-) 18 °C and minus (-) 12 °C at the highest, within three days.

**5.3.2** Frozen camel carcasses sides or cuts shall be stored at temperatures between minus (-) 18 °C and minus (-) 12 °C at the highest and the frozen product shall be consumed within 12 months.

**5.4** The following requirements shall apply to the specified types of camel carcasses or cuts:

**5.4.1** Type A: Fresh carcass — the deepest part of the carcass near the bone shall be held at ambient temperature when delivered and shall show no evidence of deterioration.

**5.4.2** Type B: Fresh-chilled carcass — the carcass shall be chilled so that the temperature at the deepest portion of the flesh near the bone shall be between minus (-) 2 °C and 4 °C and shall show no evidence of deterioration.

**5.4.3** Type C: Fresh-frozen carcass — the carcasses shall be frozen solid at minus (-) 12 °C to minus (-) 18 °C when stored and during delivery and they shall show no evidence of thawing, refreezing or deterioration.

**5.4.4** Type D: Camel cuts; fresh — shall be prepared from fresh carcasses of Type A and held at ambient temperature. The cuts shall be well trimmed and clean with surplus fat removed.

**5.4.5** Type E: Camel cuts; fresh, chilled — these shall be obtained from carcasses of Type A and chilled as under 5.4.2 or from carcasses of Type B.

**5.4.6** Type F: Camel cuts; fresh, frozen — these shall be obtained from the carcasses of Type A or Type B and frozen solid (see 5.4.3).

### **5.5 Ageing**

**5.5.1** Wet aged carcass side (primal and fabricated cuts) shall be aged in vacuum sealed bags at a temperature of 0°C to 4°C for a period of up to 4 weeks.

**5.5.2** Dry aged carcass side, [primal and fabricated cuts, shall be aged at 0 °C to 4 °C.

## **6 Hygiene requirements**

**6.1** Camel carcasses and cuts shall be prepared, handled and stored in accordance with the appropriate sections of the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya, Public Health Act, Cap. 242 of the Laws of Kenya, Meat Control Act, Cap. 356 of the Laws of Kenya, KS EAS 39, KS ISO 22000, EAS 151 and KS 2299.

## **7 Microbiological requirements**

**7.1** 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.



## 7.2 Sampling for microbial analysis

**7.2.1** Samples shall be taken from processing, storage areas, equipment used in food production or at point of sale, when such sampling is necessary for ensuring that the criteria are met. In that sampling, KS ISO 18593 shall be used as a reference method.

**7.3** Camel carcasses and camel cuts shall comply with the microbiological requirements given in Table 1 when tested in accordance with the test methods prescribed therein.

**Table 1 — Microbiological limits for camel carcasses and cuts**

S/N	Micro-organism	Max. limit	Test method
i)	Aerobic colony count, cfu/g	$10^6$	KS ISO 4833
ii)	<i>Escherichia coli</i> , per g	$10^2$	KS ISO 16649-2
iii)	<i>Coagulase positive Staphylococcus aureus</i> , per g	$10^3$	KS ISO 6888-1
iv)	<i>Clostridium perfringenes</i> (for vacuum packed products)	Absent in 25 g	ISO 7937
v)	<i>Salmonella</i>	Absent in 25 g	KS ISO 6579
vi)	<i>Listeria monocytogenes</i>	Absent in 25 g	KS ISO 11290-1

**7.4** Aged camel carcasses and camel cuts shall comply with the microbiological requirements given in Table 2 when tested in accordance with the test methods prescribed therein.

**Table 2 — Microbiological limits for aged camel carcasses and cuts**

S/N	Micro-organism	Max. limit	Test method
i)	<i>Escherichia coli</i> 0157:H7, per g	Absent in 25 g	KS ISO 16649-2
ii)	<i>Salmonella</i>	Absent in 25 g	KS ISO 6579
iii)	<i>Listeria monocytogenes</i>	Absent in 1 g	KS ISO 11290-1
iv)	<i>Clostridium perfringenes</i> (for vacuum packed products)	Absent in 25 g	ISO 7937

## 8 Food Additives

The use of food additives in products covered by this standard is strictly prohibited.  
The products covered by this standard shall not contain preservatives or any added substances

## 9 Contaminants

The products covered by this standard shall comply with the requirements of the general standard for contaminants and toxins in food and feed Codex Stan 193.

## 10 Veterinary drugs and pesticide residues

The products covered by this standard shall comply with the maximum residue limits specified in KS CAC/MRL 2. When analyzed using the appropriate approved methods, the products shall not contain any veterinary drug residue above the approved limits.

## **9 Limits for heavy metal contaminants**

Camel carcasses and cuts shall not contain heavy metal contaminants in excess of the limits given in Table 3 when tested in accordance with the test methods prescribed therein.

**Table 3 — Heavy metal contaminant limits for camel carcasses and cuts**

<b>S/No.</b>	<b>Contaminants</b>	<b>Limits, Max. ppm</b>	<b>Test method</b>
i	Arsenic (As)	0.1	AOAC 952.13
ii	Lead (Pb)	0.1	AOAC 972.25
iii	Cadmium (Cd)	0.05	AOAC 973.34
iv	Mercury (Hg)	0.03	AOAC 971.21

## **10 Packaging and labelling**

### **10.1 Packaging**

**10.1.1** 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.

**10.1.2** Vacuum-packed cuts shall be delivered intact.

### **10.2 Labelling**

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

**10.2.2** Labelling of packages of lamb and mutton carcasses and cuts shall be done in accordance with the requirements stipulated in KS EAS 38 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; and
- i) approval veterinary mark.