

Dried meat – Specification

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DRAFT KENYA STANDARD

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee.

Ministry of Industry, Trade and cooperatives
Ministry of Health – food safety unit
Kenya Industrial and Research Development Institute (KIRDI)
National Public Health Laboratories
Government Chemist's Department
University of Nairobi — Department of Food science, nutrition and technology
Egerton University – Dairy and Food Science Department
Consumer Information Network
Alpha Fine Foods Ltd.
Farmer's Choice Ltd.
Kenya Meat Commission
Department of Livestock production
Directorate of Veterinary Services
Choice Meats Ltd
Quality Meat Packers Ltd.
Kenya Camel Association
Brian Resource Centre
Kenya Bureau of Standards —Secretariat

REVISION OF KENYA STANDARDS

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KENYA STANDARD

Dried Meat — Specification

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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 fifth edition of the standard was found necessary so as to align the microbiological requirements and heavy metal limits with the current advances in science.

The standard covers dried meat made from deboned red meat.

The standard incorporates requirements that enhance maintenance of quality and safety of dried meat. The standard also incorporates parameters which facilitate fair trade practices by stipulating the minimum levels of total meat and lean meat.

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

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

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.

Kenya Meat Act Cap 256

Gulf Standards Organization (GSO 1924: 2008) – specification for dried meat.

South African for Standard for Biltong (1988)

The assistance derived from the above sources is highly acknowledged.

KENYA STANDARD

Dried Meat — Specification

1 Scope

This standard prescribes the quality and safety requirements, method of analysis and sampling of dried meat.

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 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
- XII. KS CAC/RCP 58-2005, Codex code of hygienic practice for meat.
- XIII. KS EAS 12 - Specification for potable water
- XIV. KS ISO 17604 Microbiology of food and animal feeding stuffs- carcass sampling
- XV. KS ISO/TS 17728 Microbiology of food and animal feeding stuffs- sampling techniques for microbiological analysis of foods and feeds.
- XVI. 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 Meat

is all parts of an animal that are intended for, or have been judged as safe and suitable for human consumption (CAC/RCP 58-2005)

3.2 Meat Product

Is meat that has been subjected to treatment irreversibly modifying its Organoleptic and physiochemical characteristic (OIE)

3.3 Dried Meat

is a product of a food animal that has undergone water loss to achieve desired moisture content. This can be obtained through appropriate techniques such as but not limited to sun drying, solar drying, oven drying, air drying, heat drying and freeze drying.

3.4 Food producing animals

are gazetted animals that are wholesome and fit for human consumption as per the Kenya Meat control act CAP 356.

3.5 Ready-to-eat

Products that are intended to be consumed without any further cooking steps

4 Raw materials

4.1 Meat shall be inspected and approved as wholesome and fit for human consumption and free from objectionable odours, flavours and other contamination.

4.2 All ingredients shall be of acceptable biological, chemical and physical quality and complying with the relevant Kenya standards.

5 Requirements

5.1 General requirements

5.1.1 The meat used for preparing dried meat product shall be obtained from food producing animals which have been slaughtered according Meat control Act cap 356 and shall be in compliance with KS 2299 and specifications for specific meats as applicable.

5.1.2 Dry meat products shall be prepared in hygienic conditions as stipulated in KS EAS 39 and KS CAC/RCP 58-2005.

5.1.3 The meat used for this processing shall be from one type and its flavor must be characteristic of that type.

5.1.4 The products shall be free from foreign bodies, dirt, sign of spoilage and unacceptable odors.

5.2 Essential compositional and quality requirements

5.2.1 Compositional requirements

The Dried meat shall comply with the compositional requirements as given in Table 1

Table 1 — compositional requirements

SL No.	Characteristic	limits for the final product (% m/m)		Test method
		Min	Max	
I.	Moisture content	7	30	KS ISO 936
II.	Crude fat	1.18	25	KS ISO 1442
III.	Crude protein	20	48	KS ISO937
IV.	Total ash	1	5	KS ISO 936

5.2.2 Quality requirements

Dried meat shall comply with the following quality requirements.

5.2.2.1 The **appearance** of the dried meat shall be as uniform as possible. The absence of large wrinkles and notches indicates the desired steady and uniform dehydration of meat.

5.2.2.2 The **colour** of the surface, as well as of the cross-cut should be uniform and dark red. A darker peripheral layer and bright red colour in the centre indicates excessively fast drying. Because of the remaining higher water content in the centre, these meat parts may still be susceptible to microbiological growth.

5.2.2.3 The **texture** of properly dried meat shall be hard, similar to frozen meat. A softer texture can be recognized by pressing the meat between your fingers. These pieces shall be kept for one more day in the dryer for finishing.

5.2.2.4 Taste and flavour are very important criteria for the acceptance of dried meat by the consumer. Dried meat shall possess a mild salty taste which is characteristic for naturally dried meat with no added spices. Off-odours shall not occur. However, a slightly rancid flavour, which occurs because of chemical changes during drying and storage, is commonly found in dried meat and is acceptable. Dried meat with a high fat content shall not be stored for a long period but used as soon as possible in order to avoid intensive rancidity.

6 Optional ingredients

- a) Spices, Seasonings and Condiments shall comply with relevant Kenya Standards.
- b) Edible fat and oil complying with *KS EAS 769 , Specification for edible fats and oils*;
- c) Salts complying with *KS EAS 35, Edible salt - Specification*;
- d) Curing agents complying with The Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya

7 Food additives

The food additives used in the dried meat product shall be in accordance with the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya and Codex Standard GSFA 192.

8. Hygiene requirements

Dried meat 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 58-2005 Codex code of hygienic practice for meat.

9. Microbiological limits

Samples shall be taken in accordance to the provisions of KS ISO/TS 17728.

Dried meat shall not contain any pathogenic organisms and shall comply with microbiological limits given in Table 2.

Table 2 — Microbiological limits for dried meat

SL No.	Type of organisms	Dried Meat	Test method
		Max	

i.	<i>Enterobacteriaceae</i>		KS ISO 21528-2
ii.	<i>E. coli per g(max)</i>	absent	KS ISO 16649-2
iii.	<i>Coagulase positive staphylococcus aureus, per g(max)</i>	Not detected	KS ISO 6888-1
iv.	<i>Salmonella, per 25g.</i>	Not detected	KS ISO 6579
v.	<i>Listeria monocytogenes per g</i>	Not detected	KS ISO 11290-2
vi.	<i>Yeast and moulds</i>	10 ⁴	

10 Dried Meat speciation

The identification/isolation of meat species shall be done according to the Polymerase Chain Reaction (PCR) test and Enzyme Linked Immuno Sorbent Assay (ELISA) procedure amongst other validated methods.

11 Limits for heavy metal contaminants in dried meat

Dried meat shall not contain heavy metal contaminants in excess of the limits given in Table 2 and the limits are subject to the latest revision of CODEX STAN 193

Table 3 — Limits for heavy metal contaminants in dried meat

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 Residues of Veterinary Drugs and Pesticides

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* and *KS CAC/MRL 1- Maximum Residue Limits for Pesticide Residues in Foods*. When analyzed using the appropriate approved methods, the products shall not contain any veterinary drug residue above the approved limit.

13 Packaging and labelling

13.1 Packaging

Packaging of dried meat 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 and distribution (packaging standard).

13.2 Labelling

Labelling of packages dried meat shall be done in accordance with the requirements stipulated in *KS EAS 38, Labelling of pre-packaged food* and shall include the following:

- Name of the product (of meat used) as appropriate
- Name, location and address of manufacturer;
- Net weight, in g or kg;
- Declaration as either “raw”, “cooked” “smoked”

- e) Declaration of method of drying.
- f) List of ingredients in descending order;
- g) Nutritive value
- h) Declaration of preservatives used;
- i) Date of manufacture;
- j) Expiry date;
- k) Batch number;
- l) Instructions for use;
- m) Storage conditions;
- n) Country of origin or “Made in Kenya” for locally manufactured products.