

Ham — Specification

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DKS 2305: 2018

TECHNICAL COMMITTEE REPRESENTATION

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Ministry of Health- food safety unit
Kenya Industrial Research and Development Institute
National Public Health Laboratory
Government Chemist's Department
Farmer's Choice (K) Ltd.
University of Nairobi — Department of Food Science, Nutrition and Technology
Consumer Information Network
Kenchic (K) Ltd.
Kenya Meat Commission
Directorate of Livestock Production
Directorate of Veterinary Services
Kenya Nut Company- Morendat farm
Meat Training institute
Choice Meats limited
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

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Foreword

This Kenya Standard was prepared by the Meat and Poultry 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.

Ham is traditionally made from pork. However, emerging consumer preferences coupled with advances in science and processing technology has widened the scope of the meats used in processing ham.

The preparation of the second edition of the standard was found necessary so as to expand the scope and align the quality and safety requirements as well as methods of sampling and test with the current advances in science, research and development, processing technologies

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

IS 2476 Specification for ham.

International Commission on Microbiological Specifications for Foods - Microorganisms in Foods Book 8.

Standards Institute (ISI) Handbook of food analysis (Volume VI).

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

Ham— Specification

1. Scope

This Kenya Standard specifies the quality and safety requirements, methods of sampling and test for ham. The standard applies to the product that is cured and may be smoked, spiced and/or flavoured

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. *Food, Drugs and Chemical Substances Act Cap 254.*
- II. *Public Health Act CAP 242*
- III. *KS EAS 39 - Hygiene in the food and drink manufacturing industry - Code of practice.*
- IV. *KS 2761 code of practice for meat hygiene*
- V. *KS EAS 12 potable water specification*
- VI. *Codex Stan 192 codex general standard for food additives (GSFA)*
- VII. *KS ISO 4833-1: Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms -- Part 1: Colony count at 30 degrees C by the pour plate technique*
- VIII. *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*
- IX. *KS ISO 6579: Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of Salmonella -- Part 1: Detection of Salmonella spp.*
- X. *KS ISO 16654:2001/Amd.1:2017(en)Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Escherichia coli O157 AMENDMENT 1: Annex B: Result of interlaboratory studies*
- XI. *KS ISO 11290-1: Microbiology of the food chain -- Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. -- Part 1: Detection method*
- XII. *ISO 10272-2: Microbiology of the food chain — Horizontal method for detection and enumeration of Campylobacter spp. — Part 2: Colony-count technique*
- XIII. *KS EAS 38 Labelling of pre-packaged foods — General requirements*
- XIV. *KS 2763 Meat speciation - Method of test*
- XV. *British standards EN14332, 14627, 14082, 14083, 14084*
- XVI. *Association Of Official Analytical Chemists AOAC 999.10, 999.11, 973.34, 986.15, 971.21*
- XVII. *Codex Alimentarius Commission CAC/MRL 2 Maximum Residue Limits for Veterinary Drugs in Food*
- XVIII. *CAC/RCP 68-2009 Code Of Practice For The Reduction Of Contamination Of Food With Polycyclic Aromatic Hydrocarbons (PAH) From Smoking And Direct Drying Processes*
- XIX. *KS 05-165 Methods for sampling meat and meat products.*
- XX. *KS EAS 35 Edible table salt -specification*
- XXI. *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*

3. Definitions

- 3.1. **Meat** - is all parts of an animal that are intended for, or have been judged as safe and suitable for human consumption

- 3.2. **Ham** – is traditionally a cured hind pork leg. If meat from other portions of the carcass or other food animal is used, the product name must be qualified to identify the portions.
- 3.3. **Canned ham** - Canned meat with natural juices that contains up to 10% of a solution before canning and processing
- 3.4. **Hickory-smoked ham** - cured ham which has been smoked by hanging over burning hickory wood chips in a smokehouse. May not be labeled “hickory smoked” unless hickory wood has been used. Atomized liquid hickory smoke and heat can combine to produce “hickory smoke.”
- 3.5. **Honey cured ham** - if the honey used contains at least 80% solids, or honey is the only sweetening ingredient used or when other sweetening ingredients are used in combination with honey, they do not exceed 1/2 the amount of honey used; and honey is used in an amount sufficient to flavor and/or affect the appearance of the finished product.
- 3.6. **Sugar cured ham** - if the sugar used is cane sugar or beet sugar; sugar is the only sweetening ingredient or when other sweetening ingredients are used in combination with sugar, they do not exceed one-half the amount of sugar used; and sugar is used in an amount sufficient to flavor and/or affect the appearance of the finished product.
- 3.7. **Lean ham** - the product contains less than 10 grams fat, 4.5 grams or less of saturated fat, and less than 95 milligrams cholesterol per 100 grams
- 3.8. **Extra lean ham** - ham labeled “extra lean” must contain less than 5 grams fat, less than 2 grams saturated fat, and the same cholesterol as allowed per the amount of “lean” ham
- 3.9. **Pork shoulder picnic** - front shoulder cut of pork. The term “picnic” should be accompanied with the primal or sub-primal cut
- 3.10. **Prosciutto** - Italian-style dry cured raw ham; not smoked; often coated with pepper
- 3.11. **Sectioned and formed ham or chunked and formed ham** - boneless ham that is made from different cuts, tumbled or massaged and reassembled into a casing or mold and cooked
- 3.12. **Brine** - liquid which contain mainly salt, and may either contain other ingredients, which may not be hazardous to consumers
- 3.13. **Gelatine** - a protein binder or extender that is produced by partial hydrolysis of collagen in skin, tendons, ligaments, bones, etc. of animals
- 3.14. **Ready-to-eat** - Products that are intended to be consumed without any further biocidal steps.

4. General requirements

- 4.1. The food animal from which the ham is derived shall be slaughtered in a hygienically managed slaughter-house and subjected to ante-mortem and post-mortem examination according to the procedure prescribed in KS 2761.
- 4.2. The meat from which the product is prepared shall be of a quality suitable for human consumption and free from objectionable odours.
- 4.3. The product shall be prepared, handled and delivered under hygienic conditions.
- 4.4. The product shall be prepared in a facility which is complying with KS EAS 39.
- 4.5. The ham shall be of good colour, firm with excellent conformation and good finish.
- 4.6. It shall be and shall be free from foreign matter and discoloration

5. Raw material requirements

5.1. Meat

Meat shall be derived from animals slaughtered in a hygienically managed slaughter house complying with KS 2761.

5.2. Optional Ingredients

All optional ingredients used shall be of food grade quality and conform to applicable Kenyan Standards.

5.2.1. Sucrose, invert sugar, dextrose (glucose), lactose, maltose, glucose syrup (including corn syrup).

5.2.2. Spices, seasonings and condiments complying with respective Kenya Standards.

5.2.3. Salt complying with KS EAS 35

5.3. Food additives used in ham shall be complying with the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya and Codex GSFA.

5.4. Smoking shall be done according to the Code Of Practice For The Reduction Of Contamination Of Food With Polycyclic Aromatic Hydrocarbons (PAH) From Smoking And Direct Drying Processes CAC/RCP 68-2009

6. Hygiene requirements

6.1. Ham shall be prepared, handled and stored in accordance with the appropriate sections of KS EAS 39 and KS 2761

6.2. All workers shall use appropriate personal protective equipment that does not contaminate the product.

6.3. All workers shall undergo a food handlers test before their deployment and every so often as per the Public Health Act Cap 242 and Food, Drugs and Chemical substances Act Cap 254.

6.4. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled and/or dirty equipment or from persons suffering from injuries.

6.5. All equipment coming into contact with raw material or product in the course of manufacture shall be kept clean.

6.6. Adequate supply of running potable water that complies with EAS 12 and/or steam/boiling water, brushes, and other equipment necessary for proper cleaning of machinery/equipment shall be available.

6.7. The equipment shall be cleaned, sanitised and/or disinfected using an appropriate food grade agent or with hot water at a temperature above 82 °C.

7. Safety Requirements

7.1. Microbiological limits

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

Table 2 — Microbiological limits for Ham

SL No.	Type of organisms	Max	Test method
I.	<i>E. coli</i> 0157:H7	Absent	KS ISO 16649-2
II.	<i>Salmonella</i> , per 25g.	Absent	KS ISO 6579
III.	<i>Listeria monocytogenes</i> per 25g	Absent	KS ISO 11290-1
IV.	<i>Coagulase positive Staphylococcus aureus</i> *	≤20cfu/g	KS ISO 6888-1
V.	<i>Moulds</i>	10 ²	KS ISO 21527-2
VI.	<i>Clostridium Perfringens</i> per 25g	absent	Ks ISO 7937

For ready to eat ham, it shall be absent.

8. Meat Identification

The identification/isolation of meat used in ham shall be done according to the Polymerase Chain Reaction test as per KS 2763 or any other validated test method

9. Veterinary drugs residues

Ham shall comply with the maximum residue limits specified in CAC/MRL 2- Maximum Residue Limits for Veterinary Drugs in Food. When analyzed by the appropriate approved methods, the products shall not contain any antibiotics above the approved limits.

10. Heavy metal contaminants

Ham shall not contain heavy metal contaminants in excess of the limits given in Table 3 when tested by methods mentioned therein.

Table 3 — Limits for heavy metal contaminants in Ham

SL No.	Heavy Metals	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(Cd)	0.05	AOAC 986.15, 999.11,973.34 EN 14082,18083,14084
IV.	Mercury(Hg)	0.03*	AOAC 971.21

11. Packaging and labeling

10.1. Packaging

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

The packages shall be able to withstand the rigors of handling and transportation and shall not be exposed to direct sun or rain.

10.2. Labelling

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

1. Description /Name of the product as appropriate
2. List of ingredients in descending order
3. Allergens declaration
4. Name, location and address of manufacturer
5. Net weight, in g or kg
6. Declaration as “raw” or “cooked” product
7. Declaration of minimum meat content and maximum fat content by %
8. Date of manufacture
9. Expiry date
10. Batch number
11. Instructions for use
12. Storage conditions and temperature of storage
13. Country of origin or “Made in Kenya” for locally manufactured products.

12. Sampling for microbial analysis

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. Sampling shall be done in accordance with ISO 18593 as a reference method